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COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR TRUCK AND BUS FLEET OPERATORS



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"We've been in the cartage business for more than 18 years," says Mr. Gorter. "And although we use several makes of trucks, we have more Dodges in our fleet than any other make."

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downs and, since trouble is expense, our Dodge 'Job-Rated' trucks save us plenty of money!"

Like so many other successful fleet operators, Mr. Gorter has learned that the extra value engineered into a Dodge pays off in extra operating and upkeep economy.

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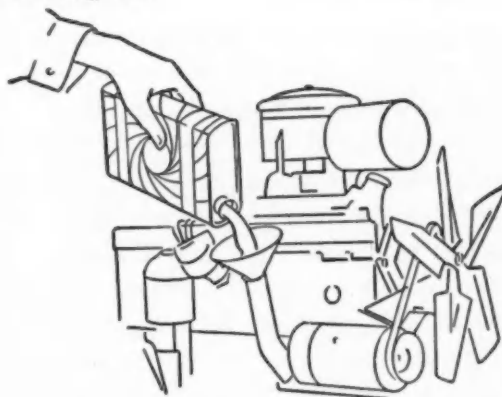
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COMMERCIAL CAR JOURNAL is published monthly by Chilton Co., N. W. Cor. Chestnut & 56th Sts., Philadelphia 39, Pa. Subscription price: United States and Possessions, \$3.00 per year; all other countries \$10.00 per year. Single copies 40¢, except April issue, \$1.00. Acceptance under Section 34.64 P. L. & R. Authorized.

Toronto Buses Snuggle in Parking Lot Heaters

Toronto Transportation Commission has won a battle with Old Man Winter in outside bus storage. Parking lot heaters save over \$300 per year per vehicle over inside storage; keep bus engines warm and enable trouble-free starting. Here are some practical tips for other fleets contemplating outside storage. Page 52.

Can We Afford Model T Roads?

No! says the author of this practical approach to our highway problem. "It has been definitely proven that the extra gasoline, oil and rubber burned up in stop and go driving plus the other operating expenses add up to more than the cost of a new modern highway free of traffic delays." Help yourself to some interesting points in favor of better highways . . . page 51.

Tailored Forms Slash Communications Cost

United Van Lines comes up with a series of highly developed forms for sending information between terminals. Streamlined system saves thousands of dollars a year in communications cost and in clerical work. For details see page 66.

Bad Brakes? Check Your Drivers

"A part of the braking problem is the selection of driver material . . . Probably more than we realize the driver should share some of the responsibility for so-called defective brake accidents," says this brake engineer. George Oetzel then proceeds to show how poor driving techniques can overheat drums to the point where they are ineffective . . . how improper braking can cause jack-knifing . . . how improperly synchronized brakes are dangerous. Story begins on page 62.

Small Fleet Shop Slashes PM Costs by 50%

Road failures have been reduced by one-third in this small fleet with the introduction of their own maintenance program. New shop layout features flexibility, full utilization of every available foot. Careful selection of shop equipment helps improve maintenance efficiency. Page 60.

Sliding 5th Wheel Licks Length Bogue

Hill Lines, Inc., of Amarilla, Tex., has developed an improved fifth wheel mount that permits a quick, easy adjustment to meet certain state laws as to overall length. This air-operated unit enables fleet to use a 35-ft trailer with a 45-ft combination length. Tips on shortening the front overhang, will enable other fleets to try this modification. See page 55.

THERE'S NO SUCH THING AS NORMAL CONDITIONS IN THE FLEET BUSINESS

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run could ruin a schedule. Reason



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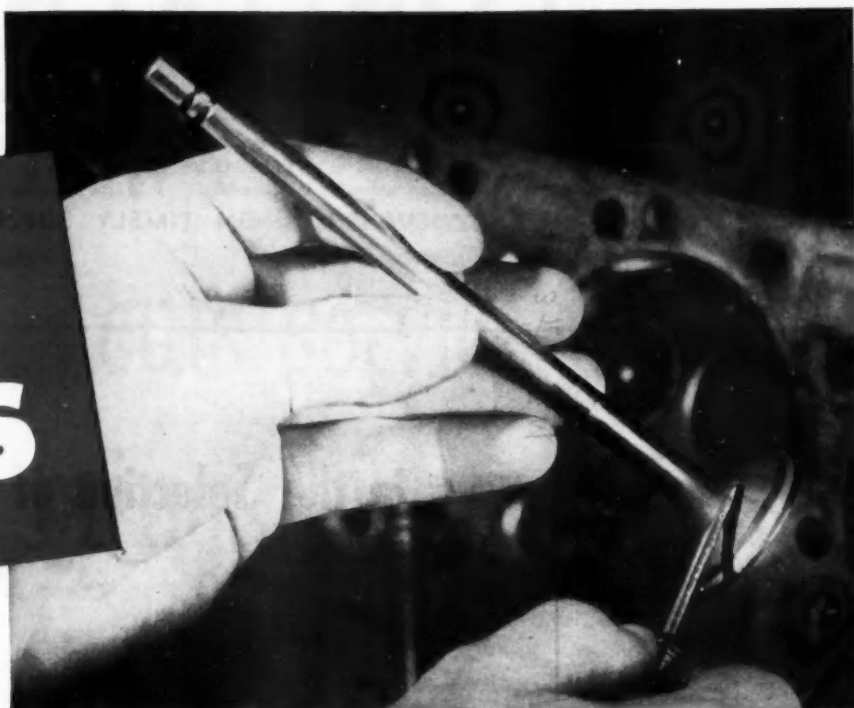


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CONFERENCE C O R N E R

PRESENTING THE EXPERTS' VIEWPOINTS ON TIMELY SUBJECTS OF INTEREST TO FLEETS

Some Factors in the Selection of Spark Plugs

Excerpts from a paper presented by—

Willard R. Houser

AC Spark Plug Div., General Motors
At an SAE meeting in Richmond, Va.

THE spark plug is used in an engine primarily as a means of conducting a voltage sufficient to jump the spark gap and ignite the charge, from the exterior of the engine to its combustion chamber. It must, therefore, be a good insulator at elevated temperatures. The voltage required is by no means the same for all engines and/or operating conditions. In fact, it is not the same for all cylinders of the same engine. Sparking voltage just recently checked on an 8-cyl engine varied from 4.5 to 6.6 kv. It is a function of the gap size, its geometry or shape, the temperature of the electrodes, contamination by residual exhaust gases, and the pressure, temperature and air-fuel ratio of the mixture in the gap area at the time of the secondary discharge. Since most present-day automotive type engines are built for better fuel economy and high speed driving, this factor of mixture in the spark gap region has become increasingly important. Some engines will not idle or run smoothly at light loads with a moderately small gap. In some installations this is of great importance and hence a large gap is used. In other cases a smooth idle is not required and a small gap may be used. Thus, today we have plugs with gap sizes varying from .011 to .040 in. If all other conditions are held constant the voltage required to jump a gap is proportional to its size.

The voltage available at the plug gap depends on the ignition system, running speed, and the amount of shunting or fouling on the surface of the insulator of the plug. A shunted plug places an additional load or burden on the ignition system and lowers the maximum voltage available from it.

A plug with a large gap will fail because of a lack of voltage before a plug with a small gap. Also, a large gap plug will endure less shunting before causing trouble. We should, therefore, use a plug gap as small as possible for longer operation at a satisfactory level.

Not only does the engine itself affect the selection of a plug but its mode of operation must also be considered. This includes the normal load or output cycle, engine speed, type and grade of fuel to be used, spark advance, absence or presence of detonation, and the importance of long plug life, or reliable operation for limited life.

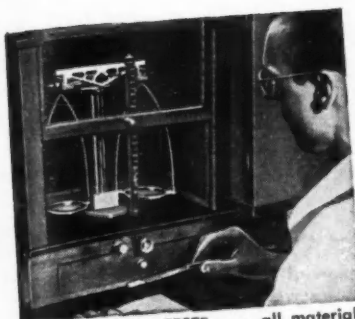
The temperature which the insulator tip must reach to prevent or retard the deposition of carbon is the same for any plug in any engine. Similarly, the temperature which must be reached before pre-ignition is induced is substantially the same for any plug in any engine. This is true if we momentarily forget differences in fuel characteristics.

If we, therefore, are considering an engine of low speed, low output, low compression ratio and its consequent low combustion gas temperature we should use a "hot" plug. That is, we should select a plug with comparatively large tip area and long tip in order to allow it to reach the optimum operating temperature. In more exact terms, a plug which rates at a low IMEP engine output. If, on the other hand, we are considering a high compression, high speed, high output engine with its resultant higher combustion gas temperatures we should select a "cold" plug. That is, a short insulator length or a high rating plug which can dissipate the heat absorbed from the high temperature gases fast enough to avoid overheating.

Whether or not the engine is to be operated under detonating conditions is a very important factor. Severe detonation increases the operating temperature of the plug materially. It also increases gap wear. Indeed, it may also lead to pre-ignition. Much work has been done by engine manufacturers in an effort to eliminate detonation or at least reduce it to a non-objectionable level. It is an ever-present problem, however, due to increased compression ratios, variations in fuels, and the build-up of deposits in the combustion chamber which affect heat transfer.

The type and grade of fuel used is important because of its relation to detonation. Generally engines using liquid petroleum or natural gas are comparatively free from this problem unless the compression

(TURN TO PAGE 155, PLEASE)



RAW MATERIAL TESTS . . . all materials must measure up to predetermined standards before they are released to production.



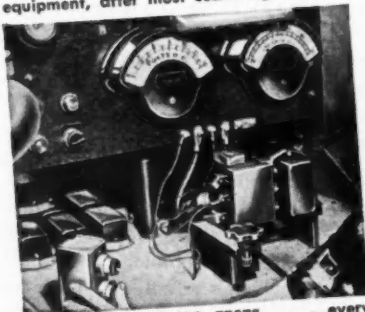
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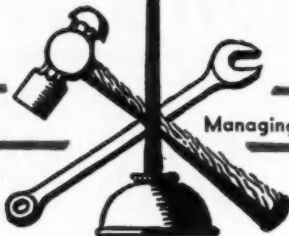


Money Cannot Buy
Better Automotive
Electrical Equipment

At Your Service

By M. K. SIMKINS

Managing Editor, Commercial Car Journal



How Radioactive Tracers Determine Wear Rates

Heart of the technique of determining engine wear rates with radioactive tracers is a radioactive piston ring, standard in every respect except that it has been irradiated in the atomic pile at Atomic Energy Commission's Oak Ridge plant. Fitted into the top ring groove in the piston of the laboratory engine, it loses to the engine oil wear particles which are radioactive, or "hot." Each wear particle, no matter how microscopic it may be, will exhibit radioactivity.

The engine oil, carrying the "hot" wear particles, is placed in a test cell containing a Geiger tube connected to a Geiger counter. This is an electronic device that detects and records the amount of radioactive material in any substance. In this instance, it is calibrated to show accurately the amount of wear occurring in a given period of time.

Under the test conditions, low cylinder wall temperatures are maintained deliberately in the ranges normal to cold operation, as during the first few minutes after starting an engine and in start-stop driving. The oils being evaluated are then tested at several different low temperatures and their wear-reducing abilities measured as described above; purging runs are made between use of each test oil, to eliminate changes of error due to the accumulation of residual radioactive iron from a previous test. Oils which show but a small degree of radioactivity, denoting the presence of relatively small quantities of "hot" wear particles, offer much more protection than those which show high radioactivity after use.

This method is accurate, and only a very short test period is required, as compared with the older conventional methods often employed.—Socony-Vacuum Oil Co. Engineering Bulletin

Bearing Adjustment

Long bearing life and quiet operation depend upon proper clearance between the bearing and the crankshaft journal. For this reason, when new crankshaft bearings are installed it is essential that the shim test be made carefully with the proper size stock to insure correct clearance between the babbitt lining of the bearing insert and the journal.

When beginning the shim test, always use shim stock no thicker than .001 in. Shims thicker than .001 in. may

become imbedded in the bearing and distort the babbitt. Place a piece of .001 shim stock, $\frac{1}{2}$ in. wide by $\frac{3}{4}$ in. long, crosswise on the babbitt surface of the bearing. Be sure that the stock does not interfere with the crankshaft journal fillet, and that the edges of the shim are smooth. *Place the shim between the babbitt surface of the insert and the crankshaft journal, parallel with the journal, when the bearing and cap are installed correctly.* Tighten the cap bolts alternately to specifications.

To determine the amount of drag caused by the shim, turn the crankshaft by hand. A fairly heavy drag indicates an ideal clearance of from .0005 to .001 in. If no drag is felt, remove the .001 in. shim and repeat the test using a .0015 in. shim. A noticeable drag when the crankshaft is hand-rotated indicates that one half of a .001 thicker wall bearing insert should be used.

If no drag is felt with the .0015 shim, repeat the shim stock check as before, increasing the size of the shim .0005 of an inch each check. This procedure will save considerable time and trouble in determining the proper size inserts for installation.—Plymouth

Chevrolet Axle Assembly

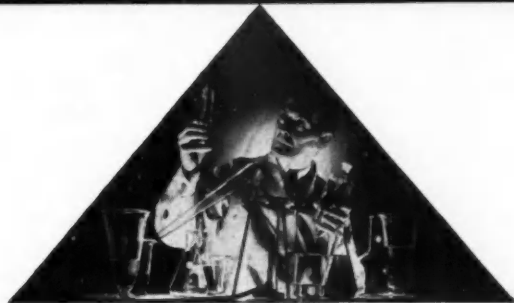
A new two-speed rear axle assembly incorporating a heavier differential spider and having a shorter axle shaft to accommodate this new spider is now available. This change was made to provide greater durability to the differential pinion gear bushings, particularly in extremely heavy duty operation. However, right hand axle shafts are no longer interchangeable. When the new differential spider is used on 1946 through 1951 two-speed axles, a new right hand axle shaft must also be used. Consequently, separate pairs of axle shafts, with the right hand shaft no longer interchangeable, are released for service on these past models.

Electric Pump Installation

When mounting an electric fuel pump on IHC trucks, the pump should be located in the most convenient, best protected spot along the fuel line and below the carburetor on the vehicle. Also the pump should be located as close as possible to the main fuel tank so fuel is fed to the pump mainly by a pushing action. If the pump is mounted directly to metal, pump is self-grounding. However, if mounted on wood or

(TURN TO PAGE 14, PLEASE)

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At Your Service

Continued from Page 10

rubber-insulator, it will be necessary to connect a ground wire from pump mounting bolt to frame rail or equivalent.

For safety advantages, the electrical connection of the pump should be connected at the ignition switch. This will eliminate any possible chance of the pump operating after the engine has been shut off.

In some cases where the pump has been wired to an independent switch, it is possible to leave the control switch on, thus pump may become operative if a leak in the fuel lines or carburetor is present.

New IHC Front Axle

The Eaton front axle used on the IHC L-190, LF-190, L-200, L-210, LF-210 and LFD-210 series chassis has been replaced by the Timken front axle model FE-900. This axle is slightly different in construction than the Eaton axle in that it has tapered steering knuckle pins and a roller thrust bearing instead of a thrust washer bearing.

To eliminate the up-and-down play in this type axle, it is necessary to replace bearing after it has become excessively worn. When this wear has reached a point where the replacement of the roller thrust bearing does not eliminate enough play to give correct adjustment, which is .015 in. maximum clearance, shims should be inserted between I-beam and steering knuckle until correct adjustment has been obtained.

Also in this type of axle, a steel sleeve bushing is mounted between the upper bronze bushing and the knuckle pin to maintain the same size bearing surface at both top and bottom. This sleeve bushing is a press fit on the knuckle pin after installation; therefore, pin should be drawn up securely, by tightening nut.

What's New Department

A New Brake Drum for Trucks, made of welded copper and steel is said to outlast conventional drums by a ratio of 7 to 1. The new drum incorporates a simple principle of heat dissipation similar to steam radiators in the home. A band of copper with fins is welded to an alloyed steel drum. Heat is thus readily dispersed to the copper base and then rapidly sent into the air by the fins. Tests show the drums will average 278,000 miles. (Test drums are still in operation after that mileage.) Brake linings lasted up to 161,000 miles in initial tests.

A New Gasifier is said to enable engines to start in less than 30 sec in temperatures as low as -65°F. Originally developed by the Robert Reichhelm Co. for aircraft engines, and currently being tested for use in Corps of Engineers equipment by the Army's Engineer Research and Development Laboratories, the gasifier seems to be an answer to the Army's prayer for something to combat the cold weather that has been hampering its operations in far-flung places.

The gasifier shows great promise of facilitating the starting of gasoline engines without the necessity of using an external heating source. Adequate cranking power is necessary for its successful operation, however, and arctic lubricants of low viscosity must be used in the engine crank case.

The device supplements the carburetor for starting only. It is essentially a fuel pre-combustion chamber with a conventional spark plug. A quantity of the fuel supplied is burned under controlled conditions to heat and vaporize the main portion. The resultant rich, warm, gaseous priming charge is sucked into the engine upon cranking to facilitate combustion independent of initial carburetor performance. After a few minutes of operation the gasifier enables the engine to operate satisfactorily in a normal manner.

Fuel Cost Per Mile Table

Here is a handy chart that will help you to locate quickly your operating costs in gasoline on a mileage basis. Keep this page handy when computing your costs. It's quicker than pushing a slide rule each time.

Miles Per Gallon of Fuel

Cost Per Gal. Fuel	5	6	7	8	9	10	11	12	13	14	15	16
.06	.0120	.0100	.0086	.0075	.0067	.0060	.0055	.0050	.0046	.0043	.0040	.0038
.07	.0140	.0116	.0100	.0087	.0078	.0070	.0064	.0058	.0054	.0050	.0047	.0040
.08	.0160	.0133	.0114	.0100	.0089	.0080	.0073	.0067	.0062	.0057	.0053	.0050
.09	.0180	.0150	.0128	.0112	.0100	.0090	.0082	.0075	.0069	.0064	.0060	.0056
.10	.0200	.0167	.0143	.0125	.0111	.0100	.0091	.0083	.0077	.0071	.0067	.0063
.11	.0220	.0183	.0157	.0138	.0122	.0110	.0100	.0092	.0085	.0079	.0073	.0069
.12	.0240	.0200	.0171	.0150	.0133	.0120	.0109	.0100	.0092	.0086	.0080	.0075
.13	.0260	.0217	.0188	.0163	.0144	.0130	.0118	.0108	.0100	.0093	.0087	.0081
.14	.0280	.0233	.0200	.0175	.0156	.0140	.0127	.0117	.0108	.0100	.0093	.0088
.15	.0300	.0250	.0214	.0188	.0167	.0150	.0136	.0125	.0115	.0107	.0100	.0094
.16	.0320	.0267	.0229	.0200	.0178	.0160	.0145	.0133	.0123	.0114	.0107	.0100
.17	.0340	.0283	.0243	.0213	.0189	.0170	.0155	.0142	.0131	.0121	.0113	.0106

New TRAILMOBILE Model "EP" Offers...

EXTRA LOAD-CARRYING MONEY-SAVING FEATURES!



Model "EP"—Exterior Post
closed top tandem

RUGGED NEW "EXTERIOR POST" DESIGN CUTS MAINTENANCE COST—INCREASES PAYLOAD!

Lightweight, extra inside width (91½ inches) and ease of repair and maintenance are standout features of the new Trailmobile Exterior Post Trailer. Formed aluminum panels, posts, roof quarter panels, doors and landing gear, put this model in the lightweight class.

Expert engineering and careful testing on the exclusive Trailmobile Stress Meter guarantee its load carrying ability.

Simplified construction is assurance of minimum maintenance and easy repairs.

The Exterior Post Model is also available in an Open Top Model, with all the advantage of greater payload with reduced maintenance.

Ask your friendly Trailmobile Branch for details and a quotation on the new Exterior Post Trailmobile.

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TRAILMOBILE INC.

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THE OPEN TOP MODEL "OEP" Trailmobile features an unusually strong and sturdy top rail. The rear header is hinged at both ends to swing in either direction, or it can be removed entirely.

ROOF BOWS are 1" steel pipe with a 10½" crown. The ridge rope is held taut by a spring coil at the front.

TARP TIE HOOKS are fastened to the body post and are self-locking, no knots to tie. Tie rails are provided on the rear doors. Another in the famous line of Trailmobile "Easy Rolling Trailers".

The

OVERLOAD

E D I T O R I A L C O M M E N T

"My Name in Romany!"

We had hoped to avoid becoming embroiled in the aftermath of the political conventions. But there is a moral too good to miss in that shot heard 'round the world: "My name is Romany (R-O-M-A-N-Y)." The little Puerto Rican nobody knew became the hero everybody respected because he had the courage to stand up for his convictions.

How often has the truck industry missed out on an important bet because some of its lesser lights did not have the strength of their convictions? Let us introduce a few potential Mr. Romanys who turned out to be "the little man who wasn't there" instead.

One is a truck executive who shouts "Down with the ABC association—it's controlled by a bunch of bigots who don't know what they're doing!" He doesn't have the courage to speak out; so he sneaks out instead. In doing so he deprives the group of his experience, his logic and the strength of his collective numbers.

Another is the maintenance man who heads out for a monthly meeting of fellow supervisors knowing full well what the exact topic will be, yet fails to take any part in the discussions. Quite possibly he is the one man who knows most about the subject. But he sits in the corner mumbling about the poor job the few leaders are doing with the program. When the session is over he's still mumbling, but he has preserved his record of contributing nothing.

Then there's the fellow who sells management on an extensive and costly trip to attend a convention. Yet when the call went out weeks before for discussion subjects—he was too busy to make con-

structive suggestions. That happened last month at a bus meeting. It was well attended and the members full of vinegar and you-know-what. But from the chairman's call for suggested discussion topics had come only *two* replies.

There are simply too few "Mr. Romanys" in this industry and the scarcity is even sharper when we encounter folks *outside* the industry. Let's ask ourselves what happened the last time somebody at a social or business gathering started talking about under-taxed trucks that bust up the roads. There are 7,000,000 potential Mr. Romanys—all dependent for their livelihood on highway transportation—who could have stood up. But did they? Did just one? Did you?

With this tremendous manpower available, it would seem about time we got the trucking story across once and for all. For years the industry has been gathering and distributing facts—through its associations and its business magazines—to make the job easy.

Next month, for example, one of the major state associations has scheduled a panel that should be most helpful. It will consist entirely of *outsiders* and the industry will meet it head on. Then it is hoped, with the experience gained, to put the show on the road—all over the state. Its theme song could well be borrowed from the great Christian hymn that says: "I love to tell the old, old story."

But the story is too big, the job too long, without the help of *all* the Mr. Romanys. There are more men in this country than sometime meet the eye who have the courage of their convictions. Let's find them. Let's use them. Let's be one of them.

WASHINGTON RUNAROUND

by KARL RANNELLS Washington Correspondent

Of Steel and Vehicles

Chances were good that if the steel strike ended before August, truck manufacturers might still be able to turn out the 1,000,000 vehicles set by the Defense Transport Administration as the 1952 target. The industry was well on its way when the steel strike began, having turned out more than 636,000 units during the first six months—nearly two months ahead of schedule.

This rate was gained by production giving the nod to manufacturers to go ahead and build trucks in excess of unit quotas. Whether the million-unit output is reached depends on whether the steel stoppage causes an actual two-months' loss of production. Part of the answer also depends on whether parts makers can meet demands for both new and replacement parts when steel production resumes.

Freight Shipments Down

It will require from four to eight weeks for freight shipments to get back to normal after end of the steel strike, Washington estimates. Impact was beginning to have telling effect in mid-July, affecting railway and highway carriers to about the same degree. Rails had lost about 80 per cent of their ore and coal shipments, with the overall loss at about 22 per cent. Highway fleets reported factory shipments down by as much as 40 per cent, by region, with the overall loss at about 20-25 per cent.

Steel strike may also result in a wide reshuffling of plans for a greatly expanded construction activity in the field of surface transportation, warehousing and storage, and port facilities. Prior to the strike, DTA had given the green light to plans for third quarter work totaling more than \$450,000,000. A lot of this work will have to be delayed from three to six months.

Production Controls Continued

Operations of fleet owners will be somewhat simpler and easier under the new Defense Production Act. Briefly, controls over materials and production are continued a full year until June 30, 1953; price and wage controls are continued through April 30. But the Wage Board is barred from taking part in labor disputes and can only make recommendations, not issue new general orders. Firms employing fewer than nine persons and workers making less than \$1 per hour are exempt.

Continuation of regulatory power over materials through next June means in all probability that controls over manufacture of trucks, trailers and other

automotive vehicles will be exercised until that date. Plan had been to begin relaxation later this year but the steel strike has upset this plan. Top officials say *that the steel stoppage has set the decontrol program back six months.*

In spite of continued price controls, the extended law bans intervention by pricing officials in applications by motor and other carriers for higher rates. Specifically, this prohibition of action applies to pick up and delivery charges, local transfer charges, parking facilities charges, and compensation paid for use of equipment owned by other common carriers.

ICC Voted 11 Million

Congress finally voted a little more than \$11,000,000 to run the Interstate Commerce Commission during the current fiscal year. This was not only about \$4,000,000 short of the amount Chairman Johnson, D., Colo., of the Senate Commerce Committee believed was necessary but also represented a cut of about \$260,000 below last year's appropriation.

In mid-July the ICC had not yet settled upon any detailed plans by which it would draw up its belt another notch. It was admitted that a tentative program for division of the funds had been drawn up. But at last word it had not been okayed by all of the commissioners.

No Changes Seen in ICC Act

There will be no further changes in the Interstate Commerce Act this year. Congress enacted three amendments before it adjourned, two of which affected motor carriers but were not considered of major importance. One (S-2360) changed the amount of securities which a carrier may issue without specific ICC approval while the other (S-3161) made some slight changes in exemptions of agricultural commodities.

Some 35 amendments which were under serious consideration were thus hanging fire. Technically they remain alive until the 82nd Congress dies Jan. 3, but for practical purposes they are already dead. There is almost no chance of their being brought up if a special session of Congress were to be called.

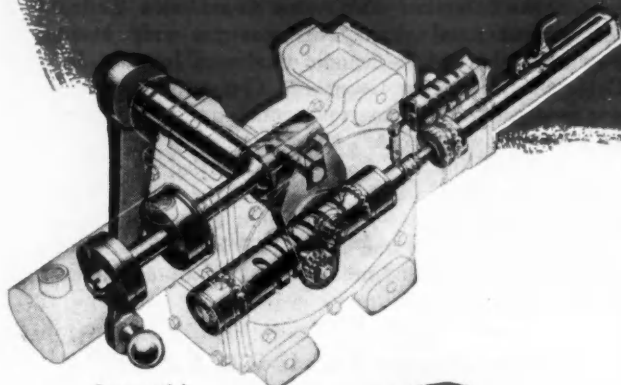
A committee source told COMMERCIAL CAR JOURNAL, however, that most of these proposals would be re-introduced again in the new Congress. Although they might be worded somewhat differently, the effect and meaning would be the same. And while formal hearings would most likely be called, these would be of short duration since the committee has already probed pretty deeply into the matters concerned.

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Ross Hydrapower—under *every* driving condition gives new steering *ease* and *safety* for driver and passengers . . . new *protection* for vehicle and payload.

We invite discussion of *any* steering problem.



DETROIT DISPATCH

by LEN WESTRATE Detroit News Editor

6-Wheelers Offer Advantages

Truck manufacturers say there is a definite trend to 6-wheelers because of state laws on weight per axle and overall length. These units enable the operator to put more weight forward on the tandem axle job and to haul 35-ft trailers because of shorter wheelbase. However, there are some serious design problems. Fifth wheels cannot be mounted too far forward because of problems in dropping landing gears, and decreasing wheelbase to shorten overall length may not leave adequate room for the proper auxiliary transmission to provide low gear ratios plus high speeds for running empty. One company is trying to interest suppliers in designing a single transmission to provide the wide range obtained by regular plus auxiliary units without making it too large and too expensive. Another problem is space for saddle tanks, which may be answered by mounting in the present running board location, using the special tank with a built-in step. These already are used in some models.

Fight ICC Tire Load Limit

Automobile transporters are up in arms over ICC's regulation limiting axle loads by tire sizes. They have gone to court and won a delay in effect of the disputed section of the new safety rules. They point out that the permissible load of 3265 lb on the 8.25 x 20 tires commonly used on automobile transports is too low and would require changing to 9.00 x 20. Such a move would cost the industry some \$3 million to \$4 million and would seriously affect height and width dimensions, and require new rims. Transporters say that other segments of the trucking industry also may find the tire size limitations a severe penalty.

Study Cab Dimensions

Some truck and trailer manufacturers are viewing with skepticism the 102-in. front-of-bumper-to-back-of-cab standard being requested by ATA to permit hauling of 35-ft trailers. They think that, in view of extensive pallet loading of cargo speeding a shift away from round-nosed trailers to square front types with a radius at the corners, 102 in. may still be too long to permit jack-knifing at loading docks. They suggest that perhaps 96 in. may be more in order, and believe that it could be accomplished by some modifications in cab design, possibly by making the back concave and widening the cab to set the driver further out. Big

problem in that connection is heavy investment in dies for present cabs.

Versatile Undercoating

Some truck operators are using undercoating materials for such uses as non-skid surfacings for running boards and other surfaces which are walked on, temporary insulation against temperature changes, and as a sealer against water, dirt, and air. The material is relatively inexpensive and is easily applied.

Are You Guilty?

A truck engineer says far too many operators who are strictly religious about PM on engines and running gear completely neglect cab maintenance. He says maintaining the cab has a definite bearing on mechanical units which attach to the cab, such as fuel and air lines, and wiring harnesses. A cab which is loose, noisy, and uncomfortable also is an important element in driver fatigue, he points out.

On Muffler Development

Apparently some progress is being made in developing a truck muffler that will provide adequate noise suppression without too much power loss from back-pressure. One company has tested several designs, one of which appears to be satisfactory although presenting something of a problem in bulk and additional cost. The company is not planning to adopt the muffler at present, but in the event of restrictive legislation feels that the muffler would meet any reasonable requirements. Also, it has been tested only by ear and not by instrumentation, since no standard for the latter procedure has been set up.

Light Weight Diesels Coming

The idea of a lightweight diesel engine for trucks is not new, with several companies working on them. One company not in the truck field has developed such an engine for the military, with a high percentage of aluminum parts, which might possibly have commercial applications. Details still are confidential, but the weight savings are rather phenomenal compared to conventional diesels in its horsepower class. However, it remains to be seen whether it could be produced economically for commercial truck use.

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ccj REPORTS

on News of the Industry

Johnson Opposes Legislation

Senator Edwin C. Johnson of Colorado, Chairman of the Senate Committee on Interstate and Foreign Commerce has stated that he is "violently opposed" to pending legislation involving a redefinition of private carriage under the motor carrier act.

Johnson's opposition to such legislation was made known in a letter to Vincent L. O'Donnell, secretary-manager of the Private Carrier Conference of American Trucking Associations, Inc., who had requested the Senator's views with respect to the controversial legislation.

The Senate Committee Chairman stated he introduced the bill "by request, as many Chairmen are often required to do," but "I am violently opposed to this bill and I will do all I can to kill it."

Lubricants to be Reclassified

The American Petroleum Institute has presented a lube oil classification scheme, developed by the marketing division of API, which has been widely discussed by the Society of Automotive Engineers. SAE standards are used at present, but the API classifications will be put into effect in the near future.

The new classification discards the grading of lubricants which has been in effect up to now and in its stead provides for so-called engine service classification, ML, MM, MS, DG, and DS—the latter two

referring primarily to diesel engines. In effect, therefore, the specifications from now on will refer to the engine, and there will be a minimum number of grades of lubricants to meet specified service conditions.

It is understood that the new deal is designed to simplify oil grades and thus simplify current marketing and distribution problems. On the other hand, the shift from the familiar to the new doubtless will initiate some new problems. The magnitude of these problems and how they will be met is still something for the future to decide. Confusion is forecast, however, when both types may be on the shelf at the same time.

Stevens Leaves ATA

Hoy Stevens has resigned as chief of operations section of the American Trucking Associations to accept an appointment with the Highway Transport Research division of the U. S. Bureau of Public Roads. Lewis C. Kibbee, assistant chief of the section has been appointed as his successor.

Test Road Plans Nearing Completion

The Idaho Road Test, project No. 2 of the Highway Research Board's study of the truck-weight and highway-design problems will get under way in September. Pre-test traffic, made up of empty trucks, will be operated for about two weeks over the test road to
(TURN TO PAGE 96, PLEASE)

DATES and DOINGS

AUG. 30-SEPT. 2—Mississippi Motor Transport Assn. Annual Convention, Buena Vista Hotel, Biloxi, Miss.
SEPT. 2-4—Pennsylvania Motor Truck Assn. Truck Roadshow, Hershey, Pa.
SEPT. 4-6—Virginia Highway Users Assn. Annual Convention, The Chamberlin Hotel, Fort Monroe, Va.
SEPT. 5-6—Michigan Trucking Assn. Annual Convention, Park Place Hotel, Traverse City, Mich.
SEPT. 8-12—Fleet Supervisor Training Course, University of Denver, Denver, Colo.
SEPT. 11-12—Wisconsin Motor Carriers Assn. Annual Convention, Pine Point Lodge, Elkart Lake, Wis.
SEPT. 11-12—Tennessee Motor Transport Assn. 18th Annual Convention, Peabody Hotel, Memphis, Tenn.
SEPT. 11-13—Pennsylvania Motor Truck Assn. Fall Meeting, Bedford Springs Hotel, Bedford Springs, Pa.
SEPT. 15-17—Truck Body & Equip. Assn., Convention and Exhibit, Chase Hotel, St. Louis, Mo.
SEPT. 16—Massachusetts Motor Truck Assn. Annual Convention, New Ocean House, Swampscott, Mass.
SEPT. 17-18—West Virginia Motor Truck Assn. Annual Convention, Daniel Boone Hotel, Charleston, W. Va.
SEPT. 17-19—National Assn. of Motor Bus Operators, Annual Convention, Drake Hotel, Chicago, Ill.
SEPT. 18-20—Nebraska Motor Carriers Assn. Annual Convention, Fontenelle Hotel, Omaha, Nebr.
SEPT. 18-20—Indiana Motor Truck Assn. Annual Convention, The French Lick Springs Hotel, French Lick, Indiana.
SEPT. 22-25—American Transit Assn. Annual Convention, Traymore Hotel, Atlantic City, N. J.

SEPT. 22-26—Pennsylvania State College Motor Fleet Supervisor Training Course, Penn State Campus, State College, Pa.
SEPT. 23—Motor Transport Assn. of Connecticut Annual Convention, Bond Hotel, Hartford, Conn.
SEPT. 28-30—Kansas Motor Carriers Assn. Annual Convention, Broadview Hotel, Wichita, Kansas.
OCT. 6-7—North Carolina Motor Carriers Assn. Annual Convention, Carolina Hotel, Pinehurst, N. C.
OCT. 6-10—American Trucking Assn. Annual Convention, Waldorf-Astoria Hotel, New York, N. Y.
OCT. 6-10—American Trucking Assn. National Truck Roadshow, Madison Square Garden, New York, N. Y.
OCT. 6-10—New York State Motor Truck Assn. Annual Convention, Waldorf-Astoria Hotel, New York, N. Y.
OCT. 6-10—Driver-Trainer Course, University of Nebraska, Lincoln, Neb.
OCT. 14-16—Society of Industrial Packaging and Materials Handling Engineers Annual Exposition, Coliseum, Chicago, Ill.
OCT. 20-24—National Safety Council 40th Annual Exposition, Conrad-Hilton Hotel, Chicago, Illinois.
OCT. 22-24—SAE Annual Transp. Meeting, Wm. Penn Hotel, Pittsburgh, Pa.
OCT. 29-31—American Society of Body Engineers Seventh Annual Technical Convention, Rackham Memorial Bldg., Detroit 2, Mich.
NOV. 18-15—Montana Motor Transport Assn. Annual Convention, Florence Hotel, Missoula, Montana.
NOV. 13-16—Oregon Motor Transport Assn. Annual Convention, Gearhart Hotel, Gearhart, Oregon.

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BULLETIN BOARD



Keep It Clean!

A little soap and solvent goes a long way toward cleaning up those bad maintenance records, but many's the guy who doesn't give a damn about dangerous zones in precision engine parts. Are you BO (Bad Operation) conscious these days? Just take a look around and you will find plenty of offending areas.

Hands clean? Just enough dirt on your hands to soil a white paper can damage a bearing surface.

Is the shop floor tidy? The normal circulation of air in the shop can displace the dirt from the floor and cause you plenty of headaches.

Tools in good shape? Many's the job that has come back because the dirt and grime from shop tools carry more abrasives than a coon dog does fleas.

Is the shop area clean? Dust from the outside, foreign particles from adjacent maintenance and grinding operations have an uncanny way of getting past your guard.

Is the replacement part clean? Improper storage is itself a frequent cause of early vehicle failure. Critical parts should be stored in airtight, dustproof containers or packages to keep crap out of the engine.

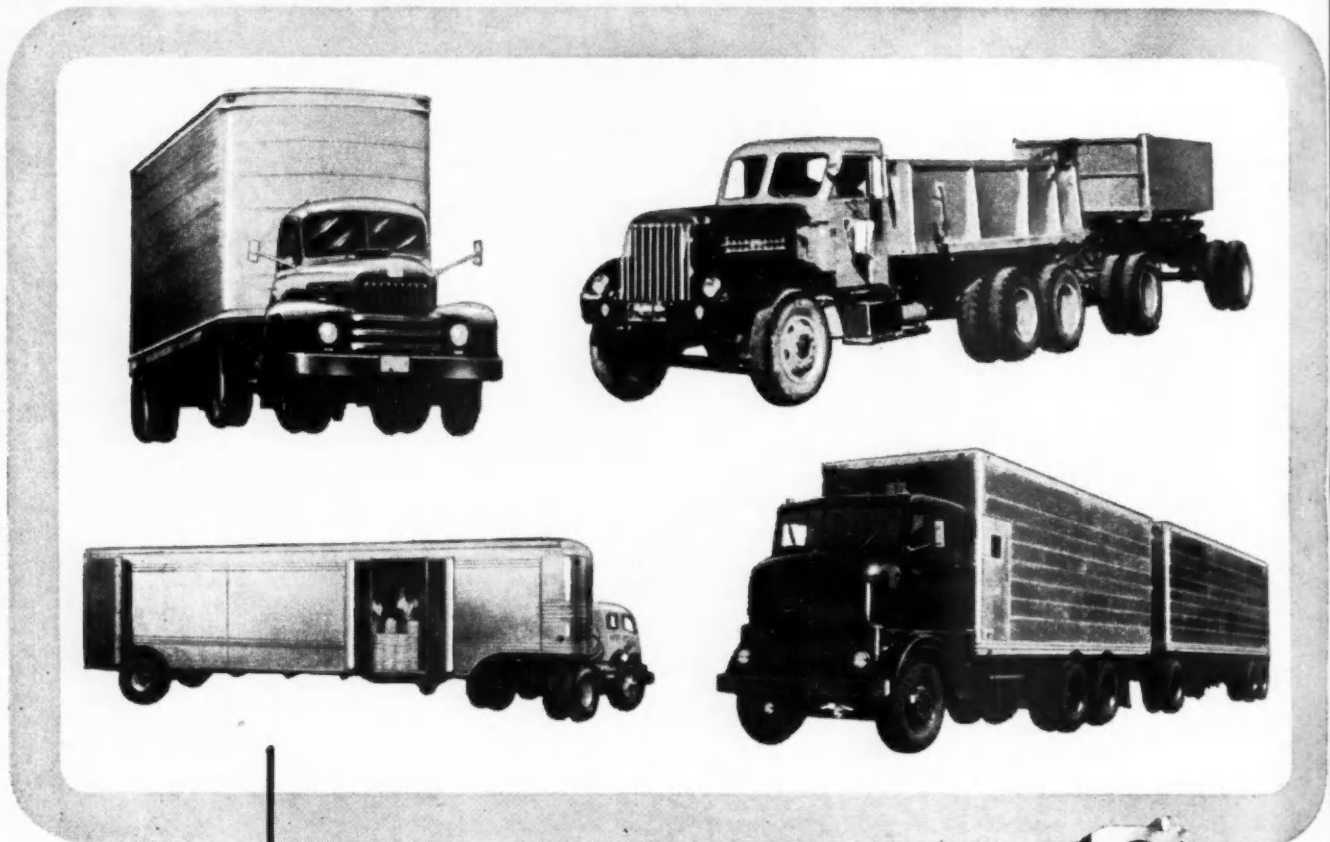
Are the gear boxes, the engine compartments, the assembly housings clean to begin with? If not, they won't clean themselves when the vehicle gets on the road.

Is the lubricant or grease clean? Open containers, dirty filling cans or contaminated grease guns make up a fifth column that is out to cut engine mileage.

Is the engine or the vehicle clean before you begin your work? If it isn't you ought to use steam cleaner, some solvent and some elbow grease before you open her up. Unless you do that, you are inviting trouble.

Dirt causes 90 per cent of bearing failures. It's a major factor in cylinder wall and piston ring wear. It discolors little boys' ears and prompts "listening in" on the party line. Let's keep it in the garden where it can raise tomatoes in place of hell with engine operation.

To Keep THESE Dependable . . .



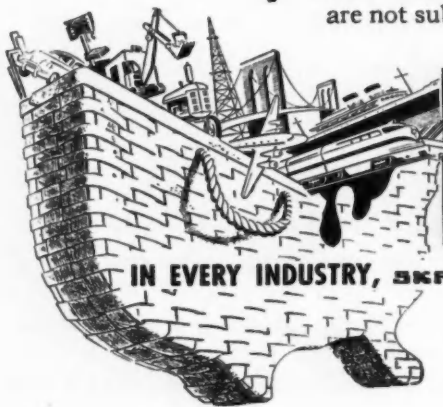
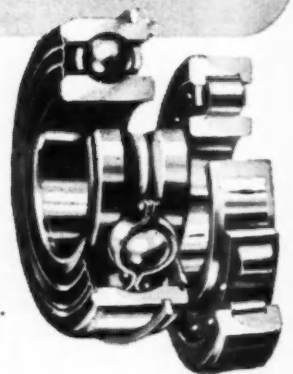
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COMMERCIAL



First Truck Driver: "I hear that Pamela, your beauteous blonde babe, has entered the hospital."

Second Truck Driver: "Yeah, she's got a private room on the second floor, Number 236."

First Truck Driver: "Geez, she must be an awful sick gal to rate private accommodations in that crowded hospital. What's she got, vernal equinoctial hyperpyrexia?"

Second Truck Driver: "Naw it ain't nothin' as serious as that. She just had her tonsils out. They just gave her a private room because she's too cute for wards."

ccj

"How are you and that handsome boy friend of yours getting on?"

"Why haven't you heard. I've done told that worm to crawl off somewhere and die. I've marked him off my list, but good."

"Gee, he was a real personality kid. Why'd you give him the sack?"

"Well, the other night we were parked in the moonlight in that convertible of his makin' with the heavy lovey-dove. In a moment of weakness, I said, 'Big boy, you've done caused me to lose my heart' . . . he started hunting for it, so I give him the bum's rush."

ccj

Safety Sadie: "Now, Cora, you know that I don't want to be branded as a character assassin, so what makes you ask me such leading questions?" No, I have absolutely no reason to believe that the Maintenance Superintendent's new Private Secretary is a 'big old gossip' . . . and, furthermore, what gave you the idea that she is?"

Catty Cora: "Well, if you must know, she spent last week end on the beach and when she came to work Monday morning her tongue was terribly sunburned."

ccj

Warehouse Foreman: "And was your friend shocked over the death of his mother-in-law?"

Fork Lift Operator: "Shocked? Man, he was electrocuted."

ccj

Traffic Rate Clerk: "Are you making any speed with that olive-skinned doll you had out to the night club the other night?"

Billing Clerk: "Heck no. She thinks no man is good enough for her."

Traffic Rate Clerk: "She's a fancy bit of fluff, my boy. She may be right."

Billing Clerk: "Yeah, maybe so. But there is a greater chance that she may be left."

ccj

Road Service Mechanic: "Look here, waitress. Last week I found a gnat in my pudding. Today there's a fly! I wonder what it will be tomorrow?"

Dizzy Diner Dame: "I can give you three guesses, big boy. This morning I found a cockroach in the flour bin."

ccj

President of Fleety-Fleet: "Now, see here, Jones. I understand that you have been going over my head."

Company Comptroller: "Not that I know of, sir," ventured the meek and frightened Mr. Jones.

President of Fleety-Fleet: "Isn't it true that you've been praying for a raise?"

ccj

The grease technician for a trucking firm dropped in at his favorite bar, wearing an enormous flashing gem. An awestruck friend asked, "Is that diamond genuine?"

"If it ain't," the technician growled. "I'm surer than hell been beat out of a half dollar."

"Cici Jay"



"We're safe . . . he'll never look this way!"

"Bill, I understand that you had quite a vacation trip. They tell me that you spent a week fishing down in Tennessee and then motored on across the mountains to one of the Carolina beaches for the final week. Tell me some of the highlights of your trip."

"Man, I ain't in a telling mood right now, it's the other way around. I'm quizzing everybody I see."

"Quizzing everybody? How's that?"

"Well, you see, the big question on my mind right now is, what can you recommend for mosquito bite, on top of poison ivy, over sunburn?"

ccj

Terminal Manager: "Be sensible, man. You can't come in here and ask for a raise just like that. You must work yourself up."

O. S. & D. Clerk: "I am worked up. See how I'm trembling all over?"

ccj

Retired Safety Director: "Doc, are you putting something in that medicine to give me a lot of new pep?"

Doc: "Nope. This is to quiet your nerves."

Ret. Safety Director: "Change it then. I need something with a wallop."

Doc: "Don't worry. I'm figuring up your bill."

ccj

The Freight Claim Agent's secretary came in with her hat over one eye, her hair ruffled, and lipstick smudged all over her face. "What happened?" her roommate asked.

"Well, I was out with a Frenchman," she replied. "I didn't want him to know that I couldn't understand a word he said so I just kept nodding my head!"

ccj

A VERY SHY GUY
IS UMPIRE THACKERAY
HE WON'T GO NEAR
A POP BOTTLE FACTORY.

ccj

City Delivery Driver (stalling an impatient landlord): "Why, sir, in a few years' time people will point to this miserable hovel of an apartment house and say, 'Vandiver, the famous trucking tycoon, once lived there.'"

"Well, for your information young man," replied the landlord, "if I don't get my rent tonight, they'll be able to say it tomorrow."

Resume Work



Prest-o-lite hi-level Batteries
 need water only $\frac{1}{3}$ as often
as ordinary batteries...last
longer...require less servicing..
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COMMERCIAL

Can We Afford Model T Roads?

Michigan, 1902. This road is inadequate, but it is also expensive for today's traffic conditions. Super highways like this New Jersey Turnpike will pay for themselves through saving in vehicle ownership and operating costs



By Henry K. Evans
U. S. Chamber of Commerce

There is growing evidence that higher expenditure for roads can reduce vehicle operating costs through reduced maintenance, improved fuel economy, lower insurance costs, etc. Here are some startling facts

AS YOU scan the morning paper's headlines on high prices and new taxes and begin to add up the family budget for next year, you might give some thought also to an expensive luxury you're supporting—America's model T roads. Highway economists have recently discovered a startling fact—that it actually costs more to keep an old road than it does to buy a new modern one. Through painstaking study of motor vehicle operating expenses and the costs of improving streets and highways, it has been definitely proven that the extra gasoline, oil and rubber burned up in stop-go operation plus the other added operating expenses add up to more than the cost of a new modern highway free of traffic delays.

A great portion of present-day traffic arteries were built in the 1920's. In those days the 18- and

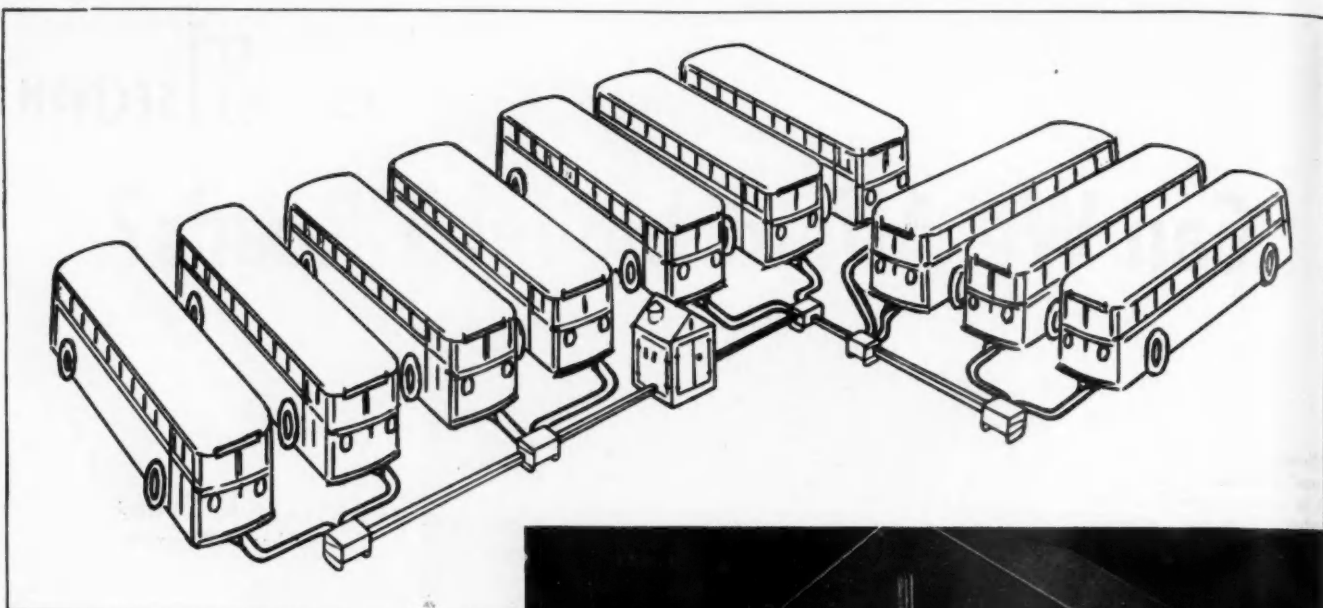


20-ft pavements were entirely adequate even though they went up hill and down dale. But today, with four times the traffic volumes of the twenties and with 52 million modern high-speed motor vehicles ranging from 1 to 50 tons on our highways, these selfsame narrow and winding roads are wasting billions of tax payer and vehicle owner dollars every year.

Reduced Operating Costs

THE added cost of out-dated roads was dramatically proven recently. Engineers of the Automobile Club of Southern California equipped an automobile with highly accurate instruments and drove it over the city streets of Los Angeles and then over the Arroyo Seco Freeway, a modern

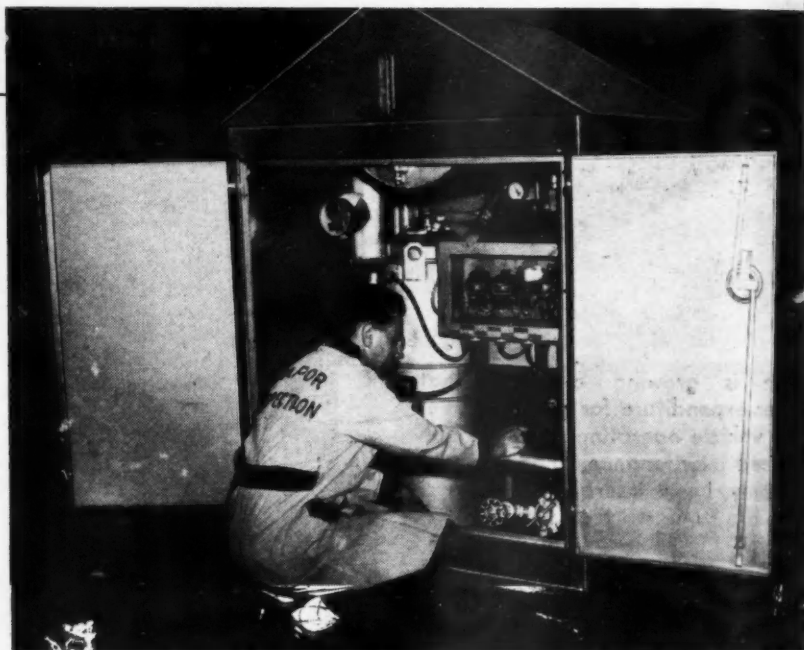
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Above. Schematic drawing of parking lot heating, showing centrally located heater, hose boxes, line to engines

Right. The heater itself puts out 275,000 BTU's per hour for an efficient oil fuel fire, burning 2¾ gallons per hour. A pump circulates water through the engine to keep temperature up

This article is based on a paper presented at the regional meeting of American Transit Assn. in St. Louis, Mo., by Robert G. Gillespie, Assistant to the Superintendent of Equipment, Toronto Transportation Commission. Photos: Courtesy Vapor Heating Co.



LIKE any well-planned battle, our annual tussle with Toronto's winter has two main objectives. The first is to keep everything operating at top tempo and the second is to hold down costs so that when the bill comes in we can pay it out of budget.

Time was when closed-in accommodation for overnight storage was thought of as an ideal to which we were moving gradually. Now, all that's changed, and the question is no longer "indoor or outdoor?" but "which system of outdoor heating is cheapest and most efficient?"

So far the automotive division has used four methods of keeping buses warm outdoors—idling of engines, use of booster heaters which utilize the bus fuel supply and battery power, parking lot heaters and electric block heaters. The first three systems have their good points and disadvantages; the last has been found unsatisfactory on all counts for buses since it doesn't have the capacity to warm interiors.

The Toronto Transportation Commission operates almost all transit facilities in Greater Toronto. In addition, a TTC subsidiary, Gray Coach Lines provides service to and from other cities in the Province of Ontario, as well as on four express bus routes within the city area. Under this system TTC operates 213 buses, of which 42 are diesel powered, while Gray Coach has 369 buses, including 35 diesels. Although the operations of TTC and Gray Coach are nominally separate, both groups share the same garages and servicing and maintenance facilities.

Our main problem is to cope with

winter conditions which are averagely severe, but not too severe. This gives the maintenance staff three responsibilities:

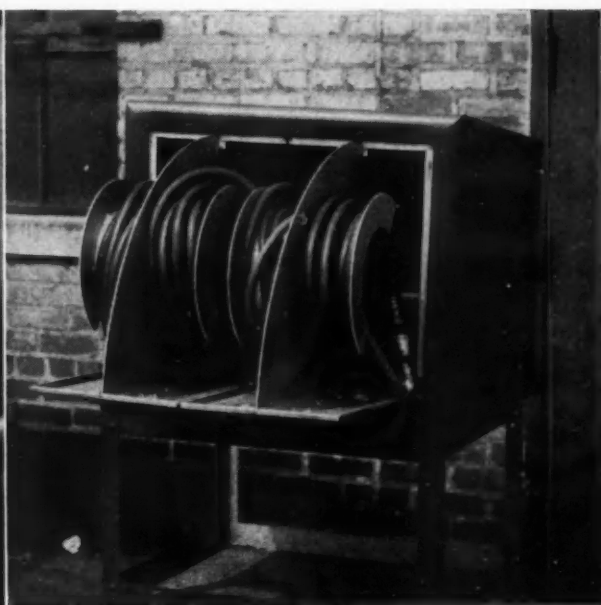
1. To be able to start all buses in the morning, without delay.
2. To keep interiors warm in service and thus the passengers happy.
3. To have efficient engine operation without cold engine sludge.

It should be explained at this point that TTC does not use anti-freeze in its buses, except for about a dozen serving Northern Ontario routes. The reason for using it here is that some of these routes pass through desolate, sparsely populated country and in

Toronto Transit Buses Sn



Inlet water hose is being attached to engine with snap connector fitting



Hose heater box simplifies storage problem

Outdoor storage of buses is practical even in colder climates when good heating facilities are employed. Oil-fired heaters save \$300 per year per vehicle over garage housing

Buses Snuggle in Parking Lot Heaters

case of an engine failure on the road the cooling system might easily freeze before help could arrive.

The reasons for not using anti-freeze in the remaining vehicles are, briefly: it's expensive initially; it's hard to know when a bus radiator is full, which means a constant loss from overfilling. In the case of alcohol the human tendency to be on the safe side frequently results in a strong solution which will boil off in the first few hours of operation. As well as this, alcohol is only successful in climates which are merely "fairly cold," not extremely cold. The final (and clinching) reason for not using

anti-freeze of any type is that bus engines must be kept warm anyway to ensure reliable starting.

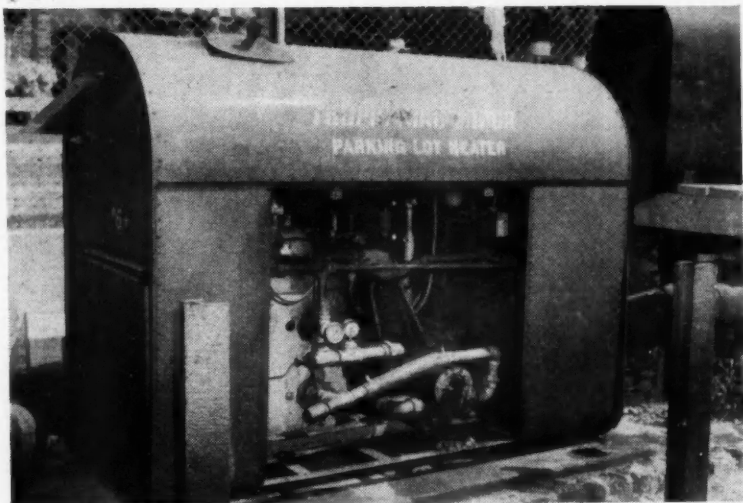
The most painless way to make sure of this easy start in the morning is, of course, to store the buses in a warm garage. We are able to do this with 311 vehicles of our total 582, plus whatever others may be in the various shops for overhaul. The way building costs are going, though, it's a fairly safe bet that although the fleet will likely continue to increase in size over the next few years, the inside storage space will not.

Recently we did some figuring on the estimated annual cost of storing

buses and here's how the various methods compared:

	Cost per vehicle, per year
Garage housing, including light, heat and power, but no service facilities	\$510
Idling of engines (fuel cost and attendance only)	270
Booster heater, where the unit is used during storage periods only	232
Oil-fired parking lot heater	199
Booster heater, when the unit is needed for vehicle operation (capital charges and portion of maintenance excluded)	109

(TURN TO NEXT PAGE, PLEASE)



Above. One of Toronto Transportation Commission's parking lot heaters. Right. Servicing the booster heater is a relatively simple matter though it must be removed from the bus. Cost of operation of the booster type heater averages \$109 per vehicle per year



Parking Lot Heaters . . .

Continued from Page 53

These figures were based on assumptions that the interest rate on building loans would be 5 per cent, that the life of buildings would be 40 years, that a parking lot heater would last 10 years, and a booster heater eight years. It should also be noted that no allowance is made for wear and tear on engines during idling.

To explain how these figures were arrived at:

GARAGE HOUSING: The initial cost of a garage, without service facilities but including the cost of land, was estimated to be \$4,500 per vehicle. On this basis carrying charges would be:

Depreciation over 40 years at 5% per annum	5.8%
Taxes	2.4%
Maintenance and repairs	1.0%
Light, heat, power, janitor service, etc.	2.1%

TOTAL 11.3%
(11.3 of gross equals \$510 per vehicle, per year)

It's realized, of course, that the estimate of initial cost is open to dispute and might not hold good elsewhere than Toronto. (One opinion we've had from a U. S. transit property has put the total per-vehicle fig-

ure as low as \$2,300). However, our estimate was arrived at after careful study of local land and building costs, as well as our own structural requirements.

ENGINE IDLING: From experience we know that an average bus, left to idle, will consume one Imperial gallon (1.2 U.S. gallons) of fuel per hour. We also know there will be some 120 winter nights when temperatures will drop below freezing and that the average number of hours idling per night will be six. At a fuel cost of 30 cents per gallon this means a seasonal fuel bill of \$216 per vehicle. Add to this an item for supervision (one man per 20 buses, at a wage scale of \$1.50 per hour, will cost \$54 per vehicle per season) and there's a total bill, exclusive of wear and tear on engines, of \$270 for each bus.

BOOSTER HEATERS: Average capital cost of a booster heater in Canadian funds is approximately \$525. (This includes about \$125 import duty and sales tax.) Assuming its life to be eight years, and allowing for interest charges of 5 per cent the yearly cost will be \$81. Fuel consumption (300 Imperial gallons at

18 cents) will be \$54. Maintenance and labor charges can be expected to be \$20, and material will account for another \$50. Attendance costs will be about \$27, bringing the total annual figure per vehicle to \$232.

Where a booster is needed anyway for operation of the bus heating system, all of the capital charges and 60 per cent of maintenance can be deleted from the above costs. This will bring the yearly vehicle charge down to \$109.

PARKING LOT HEATERS: Installation of a two-unit heater to serve 20 buses will cost \$12,835. Over a ten-year period, allowing for interest, this will mean an annual charge of \$1,670. Fuel cost, based on our own experience, will be \$1,100 (6100 Imperial gallons at 18 cents). Maintenance (80 hours at \$1.50 per hour) will run to \$120, and material will add another \$30.

Our parking lot heaters require attendance six hours a day for 120 days of the year. At \$1.40 per hour this will account for \$1,080. Power based on 2 kilowatts per heater, at 2 cents per kw. 8 hours per day will run to \$40. All these items to-

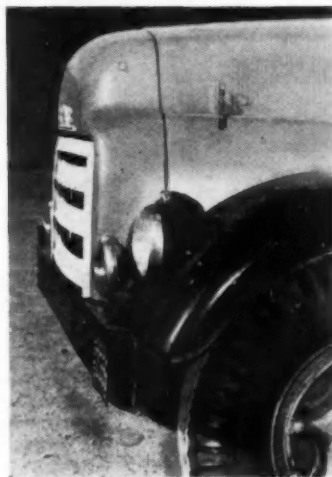
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Top. Bob Park points out adjustable fifth wheel. Below. Front overhang has been cut down 5½ in., reducing distance from bumper to back of cab to 111⅜ in.

Air-operated unit adjusts fifth wheel location to permit 35-ft trailer with a 45-ft comb. length, legal in many states

By Bob Park, Shop Foreman
Hill Lines, Inc., Amarillo, Texas



Sliding 5th Wheel Licks Length Bogie

WITH a 35-ft trailer and a GMC 650 standard truck we were 19 in. too long for the Texas law. We licked this length bogie by developing a sliding fifth wheel assembly and by cutting down the length of the truck at the front overhang. It should be mentioned here that there is already a trend by manufacturers to lessen this front overhang. Several new models are now available with a shorter overall dimension, but of course this doesn't eliminate the problem on older equipment. Our program of shortening heavy-duty

models from bumper to rear of cab allows use of longer trailers in 45-ft length limit states . . . and provides an immediate answer to the problem.

We have our sliding fifth wheel assembly made at the City Welding & Machine Shop, Borger, Texas. Tom Greenway who owns this shop is doing an excellent job for us and we understand that he is in a position to build these for other operators.

We take a standard fifth wheel, put the outside edges of its plate in sturdy guides which are securely attached to the frame of the truck, with

safety stops to limit forward and rear position.

The locking device at forward and rear position for the sliding fifth wheel assembly is a sliding plunger of the same size and strength as the king pin itself.

The lock plunger is released by air control. By a light brake action the fifth wheel plate will move into its forward position from the force or momentum of the moving trailer. When you wish to return to the original position of the assembly, all you (TURN TO PAGE 130, PLEASE)

Shift Pattern Charts Guide

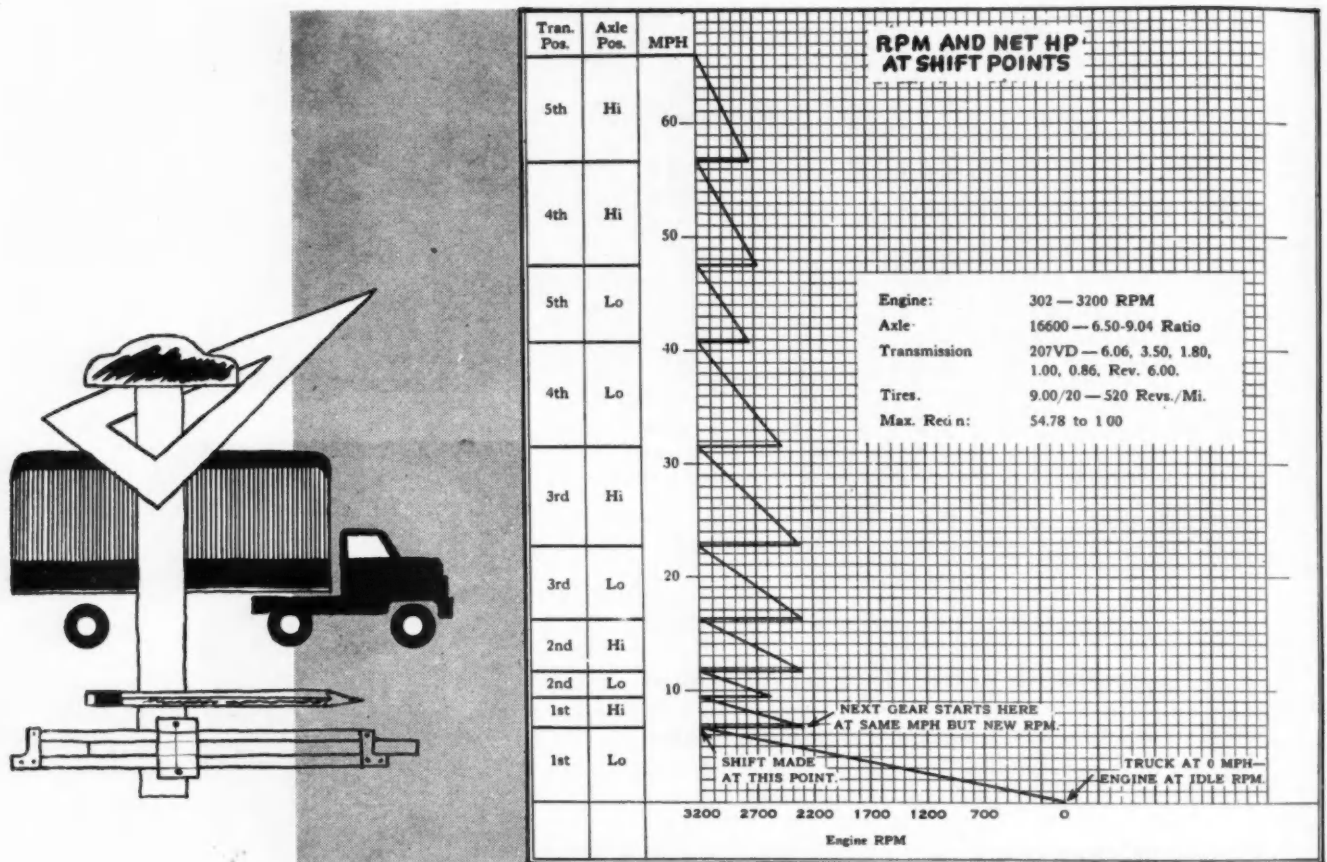


Fig. 1. Line beginning at 0 shows engine rpm in relation to vehicle speed at each transmission gear. Data from GMC's booklet, "Shift Pattern Charts"

You can improve schedules, up fuel mileage, lengthen equipment life, improve driver morale by intelligent selection of transmission and rear axle ratios through use of shift pattern charts

THE IMPORTANCE of shift pattern charts in the selection of the most effective axle and transmission combinations is generally acknowledged in the fleet field. Many fleets, however, have not taken full advantage of this graphic presentation of vehicle performance, and as a result not all fleet vehicles are geared to the point where they can render top operating performance. Actually, there is little time or trouble involved in compos-

ing a complete chart that will show at a glance just what can be expected of a particular unit in terms of hill climbing ability, road speed, etc.

Data can be set up and a graph made in a few minutes. From here on out it becomes a matter of following a line to determine what transmission or what rear axle ratio should be selected to meet the requirements of the fleet. The following data is taken from GMC's booklet,

"Shift Pattern Charts." The booklet, with complete data on a wide selection of engine models is available to GMC vehicle owners.

The fleetman wants to know two things relative to a new vehicle: Will it carry the load and will it move the load effectively and efficiently? After the original problem has been met, shift pattern charts combined with performance tables and tables of gradeabilities will show what can be

Truck Selection

They Help to . . .

1. Compare performance abilities.
2. Acquaint drivers with shifting sequences and use of gear splitting techniques.
3. Enable drivers to keep available horsepower up to maintain faster speeds through intelligent up or down shifting.
4. Enable the operator to select gear splits that are best adaptable to conditions.

line. This represents the truck just before it begins to move, with transmission in first gear, axle in low range, and the engine idling with clutch disengaged. If you were driving this truck, you would release the clutch pedal, and the truck will begin to move forward. As you depress the foot throttle further down, engine rpm will increase, with road speed increasing proportionately until the engine reaches governed speed. The example in Fig. 1 shows this to be from 0 to 7 mph as traced by the first diagonal line.

When the engine reaches governed speed in the first gear position (or recommended engine speed when not governed), you will shift into the next gear. In this example, the shift would be from low to high axle. At this point the truck is already in motion. When the two-speed axle shift is completed (or clutch re-engaged with a transmission shift) the forward motion of the vehicle will be resumed at approximately the same mph that was reached in the previous gear. However, engine rpm will be picked up at a speed which is controlled by the new combined ratio. In this example, it would be at 2300 rpm in the 1st Hi position. This point can be termed "the bottom of the shift." For each succeeding shift, the relationship between engine speed and vehicle speed is likewise plotted.

It should be noted that the shift pattern charts as used here, assume the ideal conditions. No attempt is made to consider the time required to make shifts, to allow for governor over-run, or such other factors encountered in actual operation. These shift patterns thus enable an analysis of the ratio combinations without in-

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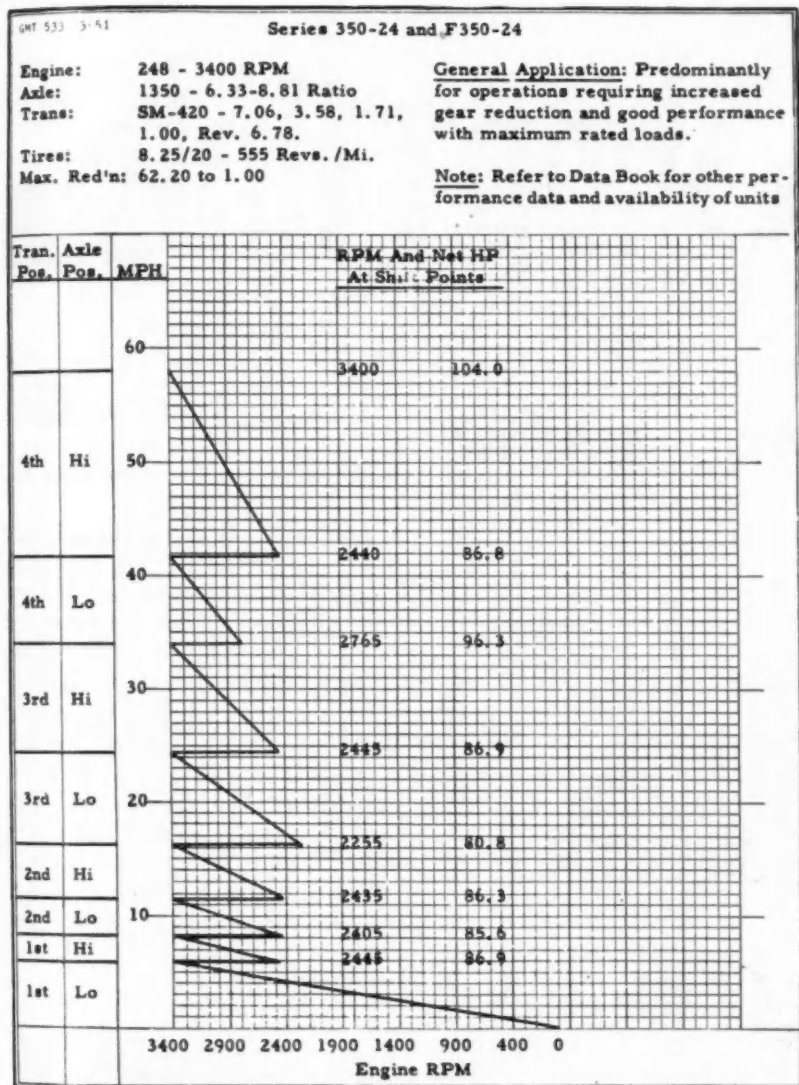
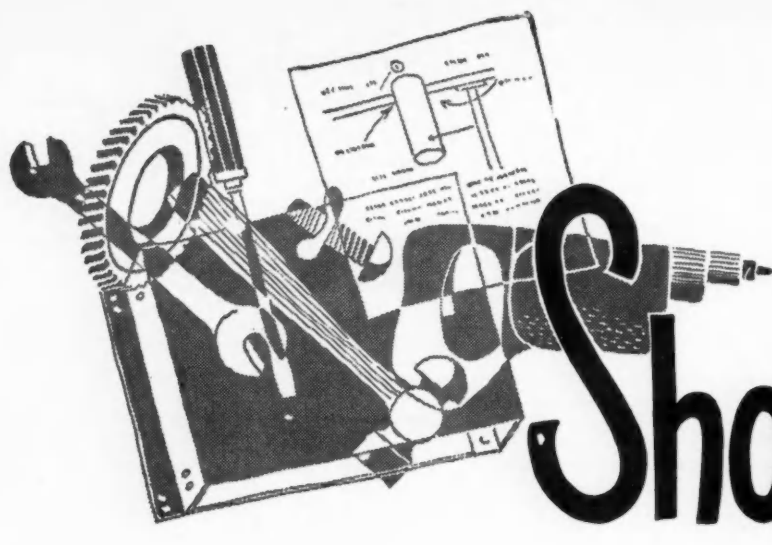


Fig. 2. A typical shift pattern chart set up for a 248 engine operating at 3400 rpm, with two-speed axle, 5-speed transmission

expected of the combination. A shift pattern chart is an easily-read graph which traces the relationship between truck road speed and engine rpm in each gear position. It records the truck movement from standstill to top operating speed, thus enabling an analysis of truck performance when various transmission and axle ratios are combined. Make up of a shift pattern can be visualized with a limited amount of study by examining

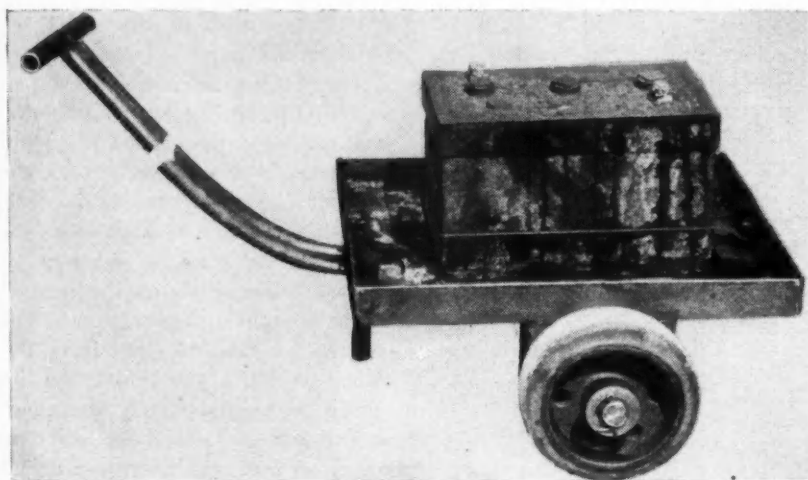
Fig. 1. Note two vertical columns on the left of the chart which show the order of shifting with transmission and axle (or auxiliary) positions listed in ascending order. A third vertical column records truck speeds in miles per hour. Engine speeds in revolutions per minute are listed across the bottom of the chart.

To follow the shift pattern, begin with the zero point located on the right hand portion of the engine rpm



Shop Hints

HINT OF \$25 THE MONTH



Handy Shop Truck for Heavy Hauling

by J. H. Burress

Maintenance Superintendent, Arkansas Motor Freight Lines
Fort Smith, Ark.

We could not find exactly what we wanted in the way of a shop carry-all that could be used for moving heavy batteries, heads, transmissions, etc. So we collected some parts and made our own.

The axle is made of a 1½-in. steel rod. The wheels were salvaged from a hand truck. They are 8 in. in diameter, with rubber tires. The body of the truck is ¼-in. steel plate, measuring 15 in. by 20 in.

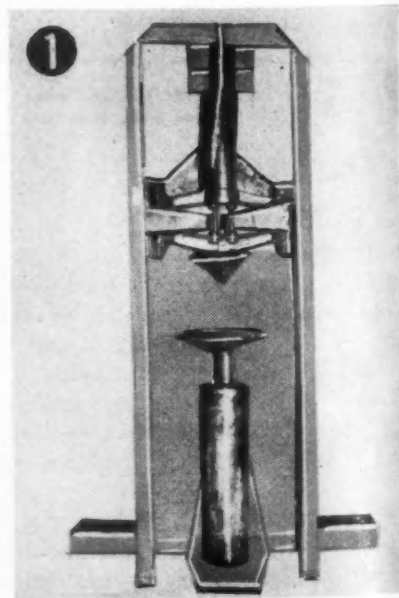
with 1¼-in. section of pipe which is used for a leg.

While we designed the truck for our particular needs, there are many adaptations which a handy shop man can make. A number of other shops have copied our truck, making their own improvements. The truck has proven its worth around our shop, and we recently made two more of them for other departments.

1. Air-Powered Packer

by Lester A. Wilsey, Jr.
Shop Foreman, Indianhead Truck Line, Inc.
St. Paul, Minn.

To speed up packing a wheel bearing, we devised an air-operated packer from some odd parts we had lying around. We took our manual packer which had been a step ahead of a handpacking routine, and an old air-operated had tire spreader. We turned the spreader upside down and fitted the cone end of the packer on the end of the spreader ram. This fits into the cone of the bearing. The packer itself is stationary at the base of the spreader. When air is applied, the cone forces grease into the bearing.



COMMERCIAL CAR JOURNAL, August, 1952

CCJ pays **\$10** for each shop hint published; **\$25** for what editors consider exceptional. Is your name here? Let us hear from you with your suggestion for a new tool, new technique, shop-designed or home-made gadget that will assist other mechanics in vehicle maintenance

FROM FLEET SHOPS

2. Improved Signals

by Edmond J. Giroux, Service Manager
New England Power Service Co.,
Worcester, Mass.

Several of our drivers reported that they had complaints of poor visibility of the directional signals, arrow type, on the rear of our vehicles. By cutting out the arrow lines from point to point, the signal can be seen from a greater distance.

3. Speedometer Tool

by John Shranko
New York, N. Y.

I have never seen a tool made specifically to remove the round nuts at the transmission end of the speedometer cable . . . so I made one. I

obtained a piece of pipe about 5 in. long, with an inside diameter of 1 in. I cut out about a $\frac{5}{8}$ -in. strip lengthwise to permit the tool to be slipped over the speedometer cable. It was necessary to squeeze the pipe a little to make a snug fit over the nut. Then, with a light tap of a hammer, the tool slips over the nut snugly.

4. Rod Holder

by Frank B. Coulomb
Inglewood, Calif.

Holding cylindrical objects like rods or tubing in a vise without damage to the stock always was a problem. Wood blocks helped some, but were not good enough for a tight hold. I took a square of steel $1\frac{1}{4}$ in.

by 6-in. long, drilled a $\frac{5}{16}$ -in. hole through one end. Then progressively, I drilled holes across the end, varying from $\frac{1}{16}$ to $\frac{1}{2}$ in. I then cut a separation lengthwise as shown, and cleaned up the inside of the holes with a rat-tail and three-cornered file. The stock is inserted in the hole with the tightest fit, and pressed into the vise. The holes may also be tapped to hold threaded stock.

5. Modified Cap Screws

by Paul Shepherd
Columbia Motor Mileage Corp.
Lawrence, Mass.

On the KB6 IHC I have had trouble with the $\frac{5}{16}$ in. cap screws which hold the thermostat casting halves together because one of them is so close to the tappet cover.

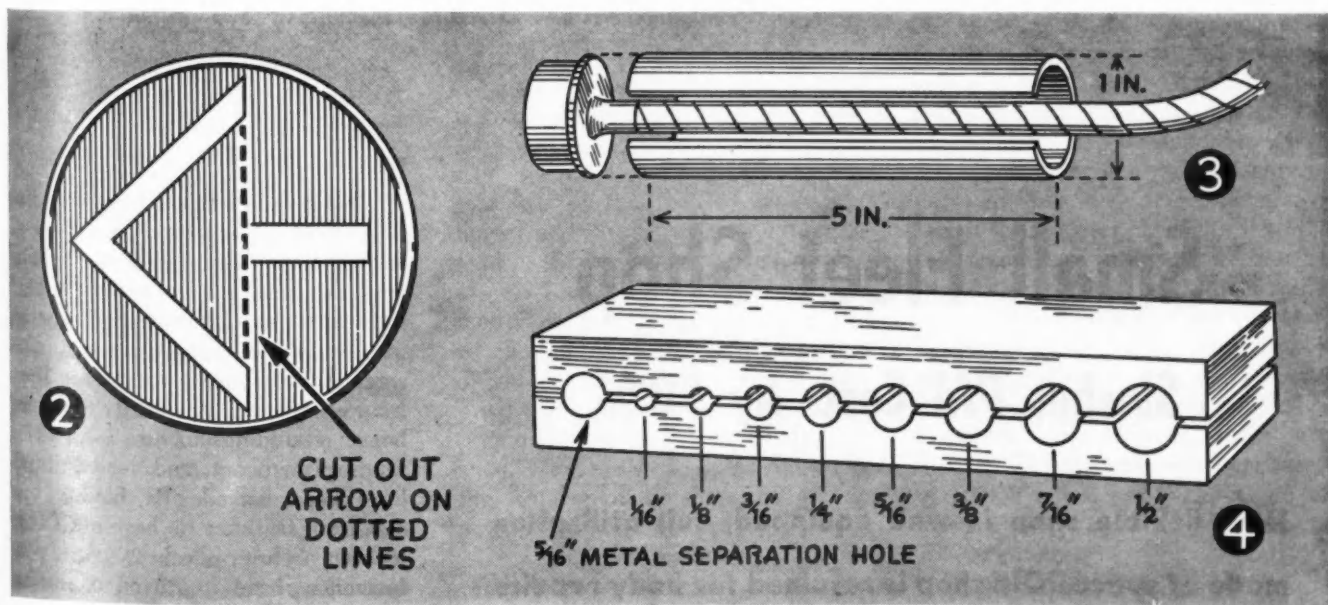
I cut a slot in the first thread with a hack saw and since the hex end of the screw is down, I can wind them up fast with a screwdriver. A final turn with a wrench is all that is needed to drive them home.

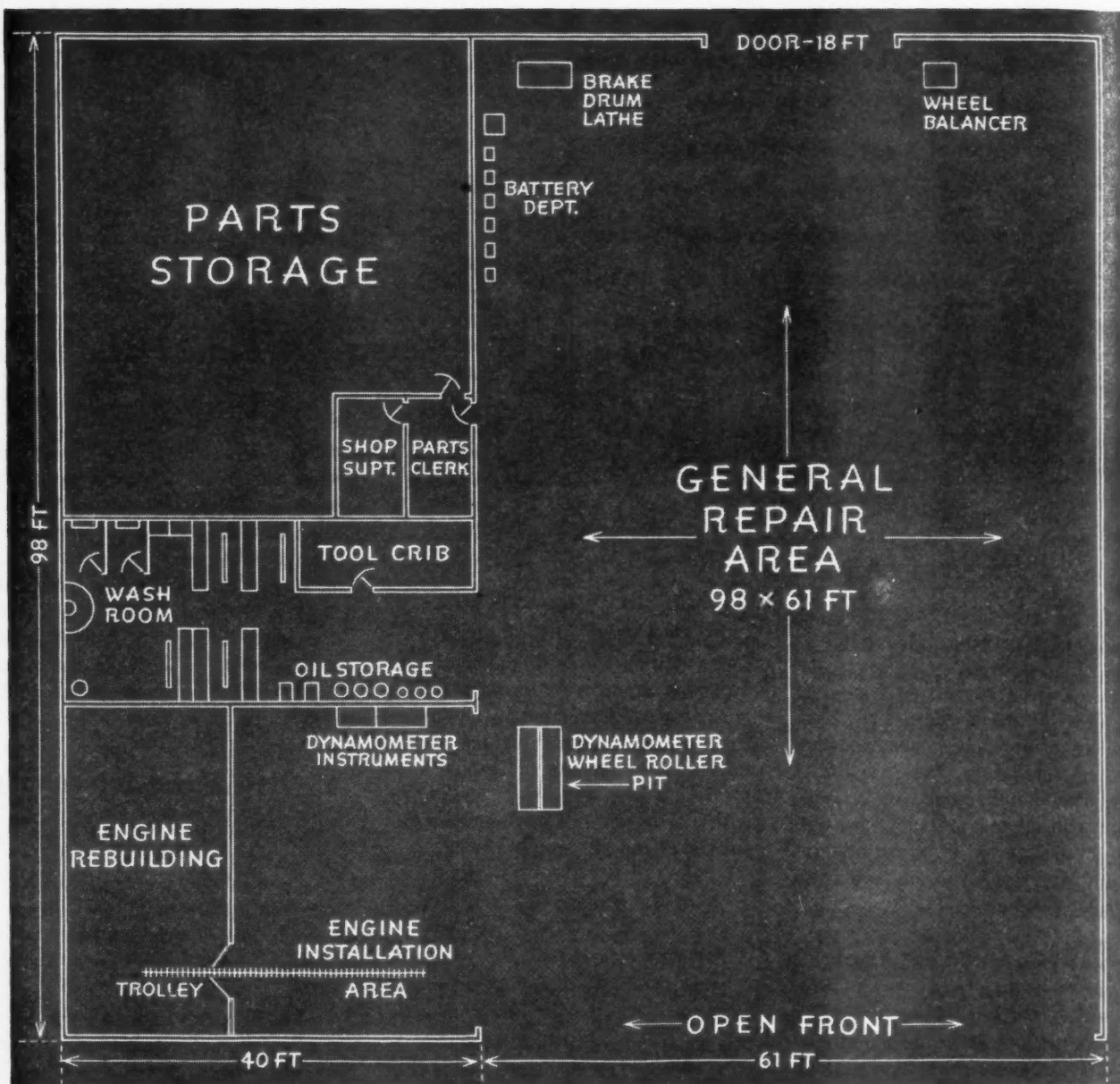
6. IHC Head Interchange

by Herbert Camis
Cemco Steel Products Corp.
Cicero, Ill.

The following method was devised for making use of old K-7 heads on new L-180 model engines and has been found to work very satisfactorily:

Bend a piece of pipe with a 1-in. outside diameter to fit around from the old bracket position to where the new bracket is placed. Mount air cleaner in this position.





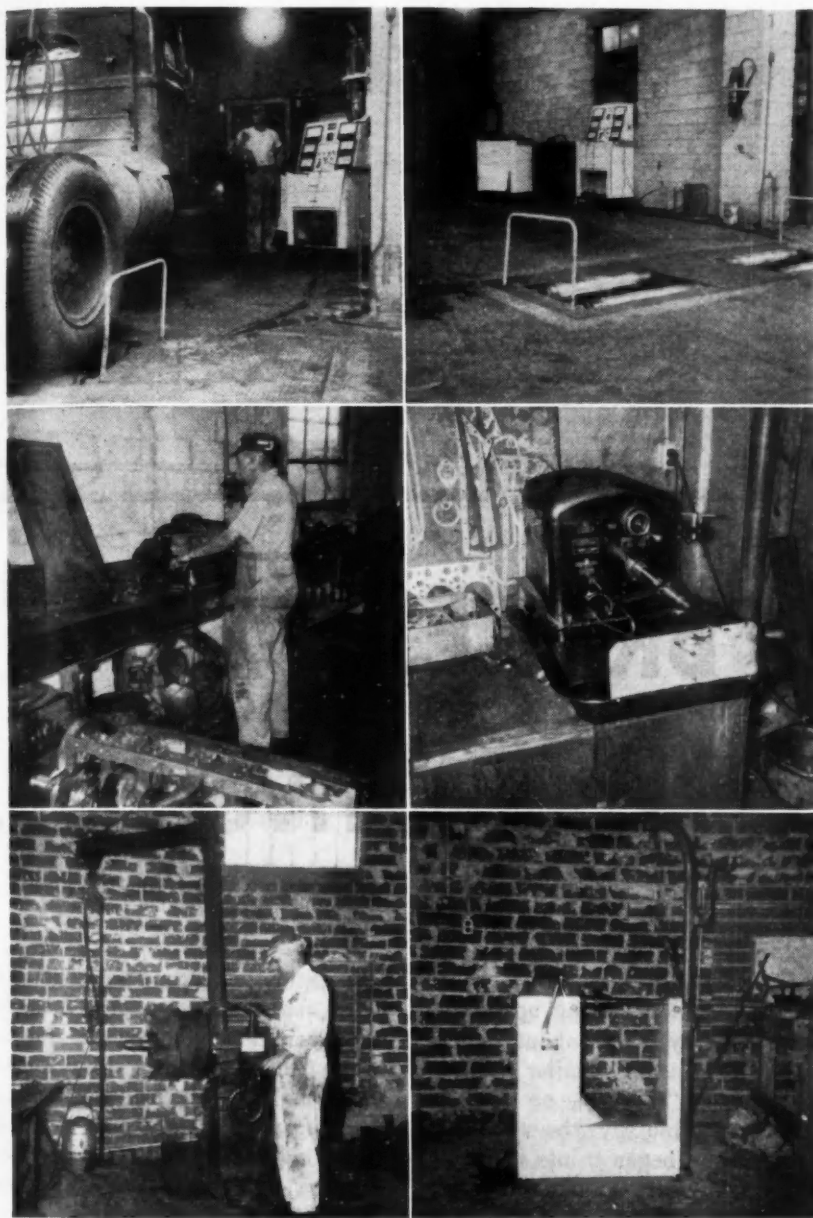
Considerable space is given special shop tools. Convenience and time saving of this arrangement pays off. Note dynamometer installation, overhaul area, modern equipment for brake drum and wheel alignment work. All equipment has been selected on the basis of shop efficiency

Small Fleet Shop

Slashes PM Costs by 50%

New flexible shop is well equipped; full utilization made of space. Old shop is retained for body repairs

WE have noted a 50 per cent improvement in the overall efficiency of our road operations—which all stems from the fact that our new shop permits improve efficiency in servicing our 286 pieces of equipment. Engine road failures on the road have been reduced about one third since we began rebuilding our own in place of sending them out, and road failures have been halved. By having our own shop facilities we have been able to keep a closer check on truck performance, have improved operating



New 10,000-sq ft shop features wide service areas for more flexible PM work. 23 employees maintain 286 units here . . . perform nearly all operations with the aid of modern, well-selected shop equipment. Washing, lubrication and tire changing are done in outside areas

By George D. Joyner

Superintendent of Operations
R-C Motor Lines, Inc.
Jacksonville, Fla.

of designating stalls by floor markings. We prefer a loose arrangement that is adaptable to any situation. When there is an unusual amount of repair work in the shop, it has been found that an extra truck can usually be squeezed in, whereas the stall arrangement makes this more difficult.

In building our new shop we have devoted more space to the dynamometer, brake drum machine, wheel balancer and motor rebuilding department alone than our entire floor space in the old shop, but they have been worth every foot of it in eliminating the necessity of sending out this work. It is not only the time saved, but the convenience of having work done when you want it.

The main shop is equipped with a wheel balancing machine, a brake drum lathe, and a brake liner and grinder besides the dynamometer. The dynamometer has turned out to be a timesaver in the shop because of giving quicker detection to the cause of any mechanical fault than is possible by the "pick and hunt" methods that sometimes had to be used before this machine was installed. For example, prior to the time the analyzer was installed, timing was accomplished with a timing light, which was not always satisfactory. By power timing with the analyzer, the road horsepower at 1200 rpm was picked up from 49 to 60; at 2000 rpm, from 72 to 82 horsepower.

The dynamometer is used regularly on every piece of equipment with results that it will recoup its cost within a year. Example: A tractor-trailer made a 1613-mile run during which gasoline consumption was 255.7 gal; after analysis and correction had been made there was a saving of 27 gal over the same trip.

Tractors are inspected after each trip on all items that are readily accessible — ignition, fuel system, brakes, steering, drive lines, lights, air pump, springs, etc. Any repairs or replacements necessary are made promptly. In addition, there are mileage basic checks — compression at 10,000 miles, end-to-end check at 50,000 miles, general overhaul at 100,000 miles.

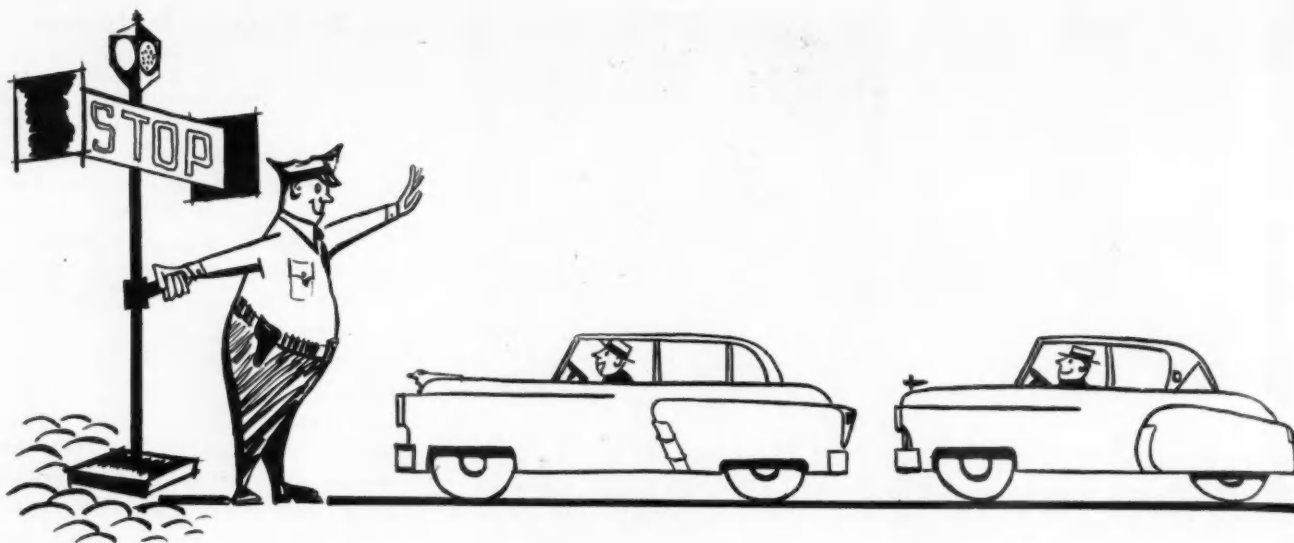
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schedules and improved customer relations to a considerable extent.

Maintenance operations at R-C Lines have been a series of growing pains. We started out in 1936 with five pieces of equipment, developing to a point now where we can boast of 286 units consisting of 98 tractors, 134 trailers and 54 pick up trucks. Operations extend from Jacksonville to New York and include various pick-up points. Routes ranging from 1000 to 2000 miles round trip are covered with time table schedules so

that loss of time caused by breakdowns and insufficient power for the loads disrupted the system. Our answer has been to rebuild, revise, modernize our shop facilities so that we can service nearly all maintenance operations. We lay our efficiency improvement to some of the facilities provided for in this new 10,000 sq ft shop. Here are some of the outstanding features of the shop and of our new maintenance system.

In laying out its main shop, we refrained from the common practice



BAD BRAKES?

Check Your Drivers

By George Oetzel
Vice President—Engineering
Warner Electric Brake & Clutch Co.

A PART of the braking problem is the selection of driver material having the necessary mental and physical qualities to become good drivers. A further part of the braking problem is the study of braking technique and the training of drivers in how to use their brakes correctly.

Probably more than we realize, the driver should share some of the responsibility for so-called defective brake accidents. For example, Joe Swish, jack-knifes his tractor-semi and reports that his front brakes locked and he lost steering control. Joe is honest in that statement. He believes that is what happened but, if his front brakes had locked he would have slid straight ahead. He might have slid into a different accident, however. No, his drive axle brakes locked to throw him into the jack-knife, but it happened so quickly that he thought he lost steering control. Even so, his drive axle brakes may not have been defective.

Suppose Joe was wheeling along at 60, saw a stop coming up but it was quite a ways ahead about 400 ft, and he used just his trailer brakes. His brakes "failed"—or faded, washed out—and by the time he realized it and began to use his tractor brakes it was too late. *Did his brakes fail, or did he expect too much of them?*

The ICC recognizes these driver factors which enter into the accident statistics, and that they recognize how difficult it is in many cases to tell whether it is really the brakes at fault, or whether the driver had something to do with it. It is easier to blame the equipment than the driver. Fundamentally, however, the driver is a human being and therefore entitled to the benefit of any doubt, and to any information or training we can pass on to him to make him a better driver.

If Joe grossed 44,000 lb and had 16x7 trailer brakes, such a stop could raise the temperature of the working face of cold drums 955 deg F, or to a temperature of 1000 deg F if the drums were 45 deg when he started. Practically all linings begin to lose effectiveness—coefficient—at around

500 deg F and from there up it is just a matter of degree. And 2.4 miles of 8 per cent grade, using all his brakes to hold down to 30 mph, would make all his drums so hot that a normal stop, then, would make all his drums about 1000 deg at the working surface if they did not fade first. The chance of getting a lining that will take such punishment is not at all good, *so maybe we had better work on Joe Swish.*

Temperature Effects

PRIMARILY, the effect of braking upon the brakes is to make them hot. You can see the water, ice, mud, dust and grease, so, from the maintenance standpoint, they are easily taken care of. Heat affects brake maintenance vitally but we cannot see it; we can see only the effects of it.

Asbestos begins to lose its water of crystallization at about 800 deg and at 1000 deg is a dry powder. The binders in a piece of brake lining break down at certain temperatures, some begin at 400 to 450 deg, few go higher than 700 deg. Heat the working face of a drum rapidly, then allow it to cool or even to equalize in



... Then Train Them

temperature. Do this a few times and cracks develop, and it doesn't matter whether you heated it with a torch or with brake lining. The effectiveness of brake lining diminishes after the break-down of the binders begin. Some become sort of oily and lose effectiveness rapidly but, in doing so, reduce the rate of heat generation and the temperature, so they last longer and do not check drums as badly. Others do not get oily and do not lose their friction as rapidly with increased temperature, but the surface disintegrates into a dust that, in effect, is like gravel on a pavement.

These are characteristics which are inherent to the materials we must use. Sintered facings withstand somewhat higher temperatures but lose friction in much the same way, and can fuse to the drum if the temperature gets high enough. The prospect of getting better materials is not good, so why not learn how to use the materials we must use?

Brake temperature is the important factor in fade and wear, and not merely the drum temperature as you might measure it while standing still, but especially the temperature of the working surface during the time the

brake is working. Speed is the most important factor in determining this temperature. Weight being stopped by each square inch of working surface of the drums is next, and here it is important that each brake work in proportion to its area but, unfortunately, this is not always feasible—especially as regards front wheel brakes. Next in importance is the rate of deceleration.

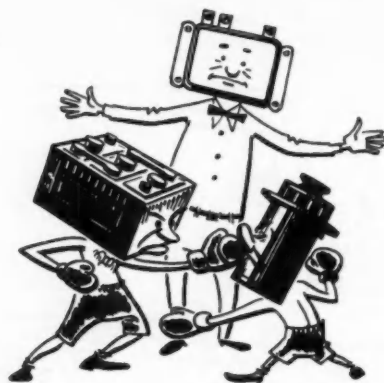
Of these three important factors, two are under control of the driver, —speed and rate of stopping. The faster his cruising speed, the farther ahead he must watch road and traffic conditions so he can lose some speed by coasting before he has to apply his brakes. Then he must begin to apply his brakes far enough ahead so he does not have to apply them hard. That is how simple it is. Of course, he should use all of his brakes for every application.

Many drivers drive this way, but a great many more do not. In city driving you see some fellows make a "jack-rabbit" start at a stop light then brake hard at the next one. Some truck drivers do too. Then in the country some drivers, in overtaking another vehicle, do not sense

far enough ahead that they cannot pass and have to snub hard to come down to the speed of the vehicle ahead. Counters, which count the brake applications, sometimes show why one driver has more brake trouble than another. City buses, which must make frequent brake applications, often run drum temperatures—measured when standing—of 450 deg F. During the application the surface temperature can easily go high enough to cause rapid wear, even at deceleration rates slow enough for passenger comfort.

Hills are another matter. Many drivers like to "run-out" a hill so they can get farther up the next one before they have to shift gears. If he can see far enough ahead he can sometimes do this safely. The Pennsylvania Turnpike has long easy grades with good visibility, yet look at the statistics for one year. Rear end accidents may be taken as an indication of braking difficulty. These were 31.9 per cent of the total number of accidents but accounted for 42.3 per cent of the fatalities. Trucks accounted for only 14.0 per cent of vehicle-miles but were involved in 65.4

(TURN TO PAGE 104, PLEASE)



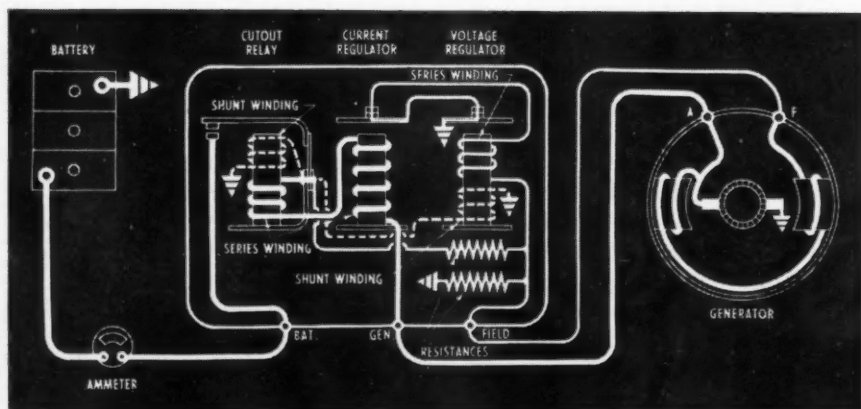
The Battery Side of VOLTAGE REGULATION

The battery, generator and regulator operate as a team to provide electrical energy. Here are some important factors to consider in selection, maintenance and adjustment

By H. B. Birt

Technical Editor
Delco-Remy Div., General Motors Corp.

Schematic diagram of control system. Heavy solid lines carry charging current from generator armature to battery. Dashed lines represent branch circuits forming voltage sensitive coils to operate points of various units. Fine solid lines carry field current



FOR GOOD REGULATION . . .

1. Remember that the battery is the basis of regulation.
2. Remember that anything which affects the battery or regulator affects regulation.
3. Remember that all regulator checks and adjustments must be made under specified conditions.
4. Tailor the setting to the job.
5. Whenever possible, keep a follow-up record on the battery.
6. Watch battery ventilation.
7. Avoid vibration of the regulator.
8. Keep all electrical connections clean and tight and wires intact.

! THERE are a few very important simple facts that every battery man should know. These facts represent "the battery side of voltage regulation." Despite their importance they have been consistently neglected in favor of the "mechanical side" of voltage regulation.

The battery, generator, and regulator are often referred to as a "team." In some respects, however, the charging circuit is more remindful of a prize ring, with the battery and the generator wearing the gloves and the regulator acting as referee. So long as no rules are violated, the battery

BATTERY TERMINAL VOLTAGE

Fig. 1. battery

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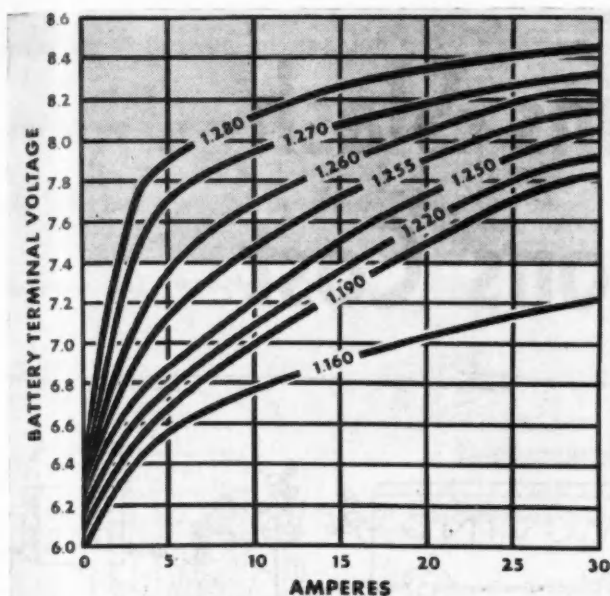


Fig. 1. Chart shows how a 15-plate battery and a 30-amp generator get along at 80 deg. F

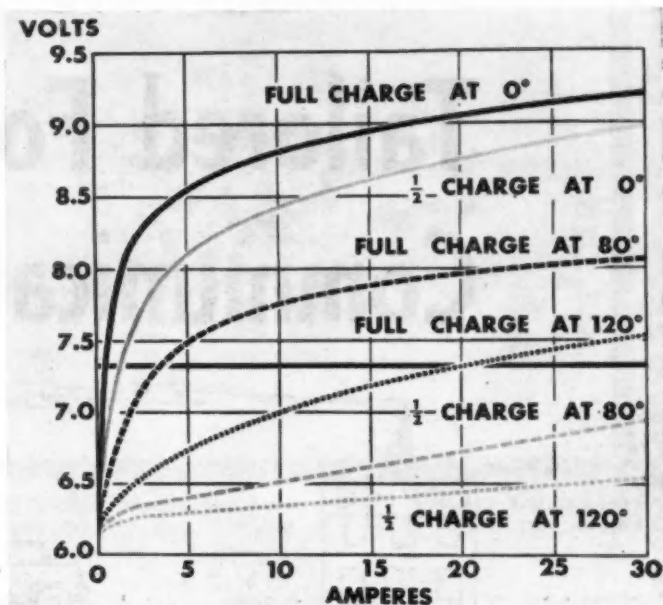
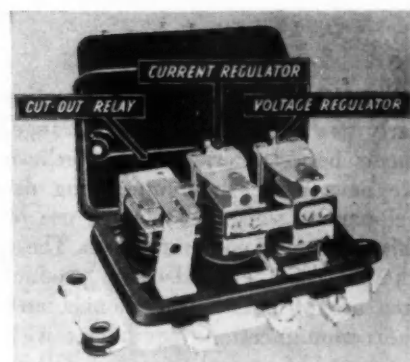


Fig. 2. Chart shows graphically the effects of both state of charge and temperature on CEMF



A typical voltage regulator. This unit 1. opens and closes gen.-to-bat. circuit, 2. limits voltage in charging system, 3. limits current output of generator

and generator are free to mix it up, and the regulator does not interfere. One unit or the other may take a terrific beating, but the regulator still will not interfere unless the rules or "settings" are violated. The battery's ability to defend itself increases as the battery comes up to charge and decreases when the battery is discharged. We call this battery characteristic "counter voltage" or "CEMF." It is vitally important because the battery regulates the charging system by its changes in counter voltage. A chart showing how a 15-plate battery and a 30-ampere generator get along at 80 deg F may help to explain how this works (Fig. 1).

This chart is divided into two areas—a light zone and a dark zone. The dividing line is at 7.4 volts, representing a typical voltage regulator setting or "limit." Thus, the dark zone covers conditions which are prevented by the limiting action of the regulator, while the light zone is the working area of the battery. The numbers along the vertical line at the left represent various voltages at the battery terminals. The numbers along the horizontal line at the bottom represent various charge rates from the generator. The heavy black lines marked with specific gravity readings are called "charge voltage curves."

These charge voltage curves tell us

what charge rate a healthy battery may be expected to accept at various voltages and at different states of charge. To use the chart, all we have to do is to select a voltage and move straight across to the right until we intersect the charge voltage curve we are interested in. We then move straight down from the intersection to the bottom line where we read off the charge rate in amperes. If we like, we can reverse this procedure, starting with a charge rate and reading off the corresponding voltage.

Notice that the charge voltage curves show that a discharged battery will accept high charge rates at fairly low voltages. For instance, the 1.160 curve shows that a battery in this condition will accept 30 amperes at only 7.2 volts. Since this voltage is not yet up to the limit, the battery would take even more at 7.4 volts. In this particular case, however, we are assuming that the generator capacity is only 30 amperes. This means that the current regulator will operate at this point to protect the generator from overload. The voltage regulator does nothing since the voltage is already below the limit.

As the battery becomes more nearly charged, higher and higher voltages are required to maintain the same charge rate. The voltage regulator, however, soon steps in to hold a limit,

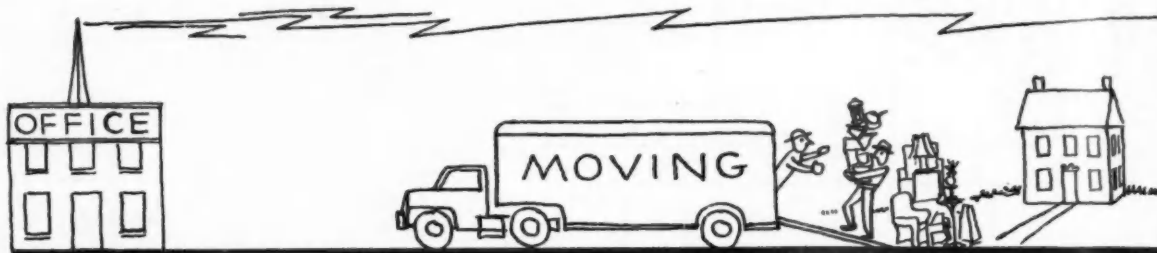
so the battery reduces the charge rate to match the available voltage. Thus we see that even at 1.190 a voltage of 7.4 volts gives us only about 18 amperes. At 1.255 a voltage of 7.4 gives us only 8 amperes, and so on. We can state this principle of regulation in simple terms by saying—if the charging voltage is limited, the charging rate will be reduced by the battery as it comes up to charge. This is the reason that batteries must be considered in any discussion of regulation. It also brings up another important fact.

Temperature Effects

THERE is another variable which has almost as much effect. That variable is temperature. Fig. 2 shows graphically the effects of both state of charge and temperature on charge voltage, or CEMF (counter electro-

(TURN TO PAGE 156, PLEASE)

Tailored Forms Slash Communications Cost



WHILE there is nothing particularly new about leased-wire arrangements between terminals, we believe we have made some interesting developments since 1948 in the use of this medium of communication. These changes have expanded the productive use of both our personnel and the communications equipment with a savings of several thousand dollars a year in communications cost and clerical work.

Specifically, we set out to develop the most efficient use of perforated forms and transmission tape. By perforated forms we mean a continuous sheet, 8½ in. wide, which can be run through both the sending and receiving teleprinters with as many as nine carbons. The forms vary in length from 4 in. to 11½ in., separated one from the other by perforations. These forms can be fed into the teleprinters at pre-set positions so that the operator at point of origin types out the message on that office's working copy of the form. Forms having matching lines and spacing, and either of the same length or of greater length, are placed in the receiving teleprinter so that all data typed at point of origin is duplicated on the same forms at point of destination.

The traffic manager of our eastern regional office at Lyndhurst, N. J., for example, receives an order to move a shipment from Hempstead, New York, to Pasadena, Calif. In addition to having his own working

While the need for fast and accurate communications is becoming more and more vital to every trucking enterprise, it is of particular importance to the household mover. For this segment of the industry not only furnishes transportation, but also must be prepared to render advice and counsel on many related problems such as packing, crating, storage, etc. Because most families are under stress as moving day approaches, and because distances may range from five to 4000 miles, exact facts and meticulous coordination on the part of the mover are paramount.

In the accompanying article, the well-known past president of ATA's Movers Conference of America outlines some of the extraordinary steps his company has inaugurated to produce the desired results. Typically, he passes on much of the credit to United's vice president L. A. Larimore and management coordinator Bernard Bereswill, as well as to Western Union.

By J. Wallace Fager

Vice President and General Manager
United Van Lines, Inc., St. Louis, Mo.

copies of this shipment for dispatching purposes he must furnish the general office at St. Louis several copies of the order for its records. Or he may want to relay the order information to our Los Angeles office. When he instructs the registration clerk to forward the information to St. Louis or to Los Angeles, the registration clerk types the order information on

the form to be used by the traffic manager. Simultaneously the information is received on a similar form in St. Louis or Los Angeles, in the same spaces and on the same lines as it was typed in Lyndhurst.

If, as is generally the case, the regional office does not want to tie up the leased-wire while the form is being typed, the office can insert a

Maximum utilization of special
forms speeds communications,
cuts clerical work, promotes
efficiency for household mover



chadlis-perforated tape in the printer-perforator attachment of its leased-wire facilities, punching into this tape the perforations which will activate the type-bars of the teleprinter at destination when the tape is transmitted on the leased wire.

This tape is a miniature version of the old player-piano roll. The operator can take as long as she needs to type the forms; can stop to answer the phone or handle any other business that may come up during the typing. Then when the operator is ready to send her typed matter to the receiving office, she merely pushes a button on the automatic transmitter and the tape does the rest, sending the typed matter to the receiving station at the steady uninterrupted rate of 60 words per minute.

It is obvious how quickly order-information can be transmitted by our leased-wire operations compared with our old system by which a copy of the order had to be mailed from Lyndhurst to St. Louis, and there re-typed to provide sufficient copies for the various departments of our general office.

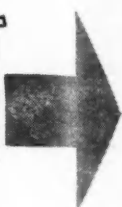
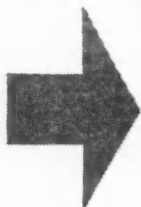
Still another advantage of our mechanized operation is the fact that a tape can also be cut by the receiving machine, identically similar to that used for the original transmission. Hence, if it becomes necessary to further duplicate the message or form at the receiving station, all that (TURN TO PAGE 110, PLEASE)

ORDER NO.	SHIPPER	ORIGIN	DESTINATION	MOVING DATE	CU. FT.	VAN
OFFICE NO.	LOADING ADDRESS			LOADED		
ORIGIN DIST. CODE	DELIVERY ADDRESS			DELIVERED		
WEIGHT	MILES	RATE	TRANS.	C.O.D.	CHG.	INSURANCE
REC. DATE	BOOKING AGENT	DO NOT TYPE				
DO NOT TYPE BELOW THIS LINE						
DRIVER'S NAME AND COMPANY						
DATE	LOAD	TIME	DATE	UNLOAD	TIME	YES
DATE	LOAD	TIME	DATE	UNLOAD	TIME	YES
UNITED VAN LINES, INC. ORDER FOR SERVICE REGISTRATION						

Fig. 1. ORIGINATING FORM. Perforated forms of this type are fed into the teleprinters with information for the receiving end at 60 words per minute

Fig. 2. RECEIVING FORM . . . representing one of the most popular forms used at United in wire service. Perforated section is used as file tab for particular shipment. This simple gimmick itself eliminated service of one man

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ORIGIN DIST. CODE	DELIVERY ADDRESS			DELIVERED		
EST. WEIGHT	MILES	RATE	TRANS.	C.O.D.	CHG.	INSURANCE
REC. DATE	BOOKING AGENT	SHIP NO.				
REMARKS						
AGENT'S CODE	NAME	AGENT'S CODE	NAME	VAN NO.	TRUCK MILEAGE	MILES
1 Haul		1 Haul				
1 G-11		1 G-11				
1 Haul, \$1.00		1 Haul, \$1.00				
1 SET-OFF		1 SET-OFF				
2 COMM.		2 COMM.				
3 PACKING		3 PACKING				
4 UNPACKING		4 UNPACKING				
5 LO. UNLOAD		5 LO. UNLOAD				
6 STORAGE		6 STORAGE				
8 WAREHOUSE		8 WAREHOUSE				
10 AGENT ADV.		10 AGENT ADV.				
19 COLLECTION		19 COLLECTION				
TOTAL		TOTAL				
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1 Haul, \$1.00		1 Haul, \$1.00		1 Haul, \$1.00		
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8 WAREHOUSE		8 WAREHOUSE		8 WAREHOUSE		
10 AGENT ADV.		10 AGENT ADV.		10 AGENT ADV.		
19 COLLECTION		19 COLLECTION		19 COLLECTION		
TOTAL		TOTAL		TOTAL		
VAN NO.	100% HAUL	VAN NO.	100% HAUL	VAN NO.	100% HAUL	
UNITED VAN LINES, INC., DISTRIBUTION OF REVENUE						



Driver Jim fails to get accident data . . . Fleetman Brown neglects to follow up . . .

NOT How_A to Bungle

INSURANCE CLAIMS

You can't afford to neglect any detail with regard to accidents. Here's how to avoid

INSURANCE policies are good investments. Insurance claims can mean unnecessary losses. An improperly filed claim can cost the fleet operator slimmer benefits from his accident, fire, theft or liability coverage. Failure to furnish the insurer with sufficient information concerning an accident recently cost at least one truck line over \$50,000 in unpaid policy benefits!

Dishonest insurance companies are practically a thing of the past, but no insurer, regardless of the circumstances, can afford to honor claims not accompanied by the information specifically requested in the insurance contract.

Consider the case of Trucker Bill Brown. One of Brown's trucks is involved in a serious collision, resulting in injuries to several persons and damage to the vehicle's cargo. Brown, in a stew over the matter, forgets to check with his driver to determine whether he has obtained necessary information concerning the circumstances of the collision. Brown also fails to contact his insurance agent until 24 hours afterwards.

By this time some of the facts are beginning to grow a bit hazy to the folk who saw the smashup. When Bill gets around to talking to them a couple of days later, he finds that many of their stories differ sharply. He is forced to piece his information together, and being a big wheel in the trucking business but a poor detective, he's none too successful. When the trained eye of the insurance company claims manager comes to rest on Bill's accident report, some details are detected that smack of inaccuracy.

When an investigator arrives to check further on the accident, he finds that the "front office's" fears are well-founded, and that Bill has erred badly in some of his former statements.

Bill's mistakes were honest ones, of course, but the insurance company must still obtain facts before it can pay off his claim. What is more, except in a few cases where compromises can be worked out, the insurer will be obliged to disclaim (reject the claim) entirely—at least where trucking operations are concerned.

The insurance company's investigator finds after diligent search that certain vital facts cannot be uncovered at that late date. Some of these missing facts make it impossible for the insurer to definitely fix responsibility for the wreck and to ascertain certain other circumstances called for under the provisions of Bill's policy. These facts could have been obtained by Bill's driver at the time of the collision. After a couple of months the insurance company is forced to break the bad news to Bill. His claim cannot be paid. Reason: insufficient information.

Possibly the fault wasn't really Bill's. His misfortune may have been a nasty trick of Fate. Many Bill's, however, have emerged poorer but wiser on similar occasions because of carelessness in reporting losses.

Details Are Essential

FOR one reason or another, essential details are often omitted on claims forms, and their absence produces extra labor for both insurance company and trucker, may lead to delayed or refused claims payments.

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Adjuster gets insufficient information And insurer is left in the dark

By Stuart Covington

Bungling those insurance claims and save money

One of the most common discrepancies is the insufficient description of equipment involved. Perhaps Trucker John Jones leases or hires trucks or trailers from a fellow hauler. Then a collision occurs involving this borrowed rolling stock and Jones neglects to note properly its ownership on his insurance claim. But it's important to his insurance company. Under particular conditions, their liability might be a bailee's. Under others (where the policy is written on a described unit basis) the company might not be liable at all.

According to some insurance companies, many fleet operators are negligent about furnishing the location of equipment at the time of their loss with respect to nearby property or adjoining hazards. Many a claim for stolen equipment fails to mention whether the truck was on the claimant's property at the time it disappeared, whether it happened to be protected by a locked enclosure and whether the vehicle was securely locked when stolen.

Companies writing fire insurance

face another problem: their claimants often don't specify the origin of the blaze. One of the most common all-around complaints is that no comment is made regarding the operating condition of the equipment immediately prior to the trouble precipitating the claim.

Adjustment of insurance claims is a complex and highly specialized business and obviously necessitates a variety of forms. Basically, however, the four generally affecting truckers—accident, fire, theft and cargo—will request the same rudimentary information on the respective forms.

Get the Facts

AN accident claim form will contain an average of 25 questions, varying from a request for a description of your vehicle to a query as to whether or not the lights on the other vehicle were burning. Questions will cover such points as your driver's age; property damage in addition to vehicles involved; names of injured parties and the type of medical treatment they required; names of witnesses; the time and location of the

accident; the circumstances of the accident; the surroundings at the scene of the accident; the weather conditions and the actions of law enforcement authorities. Usually a description of the accident in his own words, together with a diagram showing how it happened, will be requested of the driver.

Although the most common claims form to confront the fleet operator, the accident claim should never be taken matter-of-factly. It should be borne in mind that no two accidents happen exactly the same way, no matter how similar they may appear. These forms therefore, deserve careful, individual attention. The familiar adage, "familiarity breeds contempt" should never be permitted to apply here. Although rather lengthy, these forms are not as complex as they seem, require time and patience rather than intense concentration.

Because fire damage claims are often more difficult to investigate than accident claims, forms for these claims should be filled in as completely as possible. Questions here will cover such points as the amount of damage caused by the fire, the location of the truck at the time of the blaze, the promptness of the fire department in responding, the type of cargo, if any, its declared value, the speed of the truck at the time the blaze was discovered (if the vehicle was in motion), the truck's location and the surroundings (if it was idle) and, of course, the reported cause of the fire, if determined by the fire department.

(TURN TO PAGE 122, PLEASE)

LA TRUCK SHOW Presents

THE Third Annual National Truck, Trailer and Equipment show held recently in Los Angeles featured several new developments of interest to fleetmen. Products of 114 exhibitors representing a wide cross section of the industry were examined by over 31,000 people.

New products in lightweight materials were on display. Aluminum and magnesium parts, aluminum bodies, a new axle and the Boeing gas turbine were featured. Among safety devices shown were a new type rear view mirror, heavy-duty braking equipment and blow out proof tires.

In addition, the LeRoi H540, V8, 200-hp truck engine was shown for the first time on the West Coast.

Studebaker displayed six models ranging from a half-ton pick-up to a husky 2-ton chassis model. Among the exhibits was the 4R-17 six-wheeler with a 171-in. wheelbase, a 245-cu-in. displacement, a 2-speed axle, 4-speed transmission and a GVW of 16,000 lb.



This Boeing gas-turbine - powered Kenworth truck was displayed at the show, after finishing a border-to-border test run from Canada to Mexico. The 55,000-lb. gross combination weight truck and trailer unit made the trip 1445-mile in less than 60 hours. Windows located on both sides of the engine hood provide a spectator's appraisal of the 200-lb. 175 hp power plant. The gas turbine engine, designated as the Boeing Model 502, has no radiator or cooling system, and only one tenth as many parts as comparable gasoline or diesel engines. As a result, the company reports, trucks equipped with this engine would weigh at least 3000 lb less than the present diesel-equipped unit. The Boeing engine occupies only 13 per cent of the space required by a diesel. It is only 40 in. long, 23 in. wide and 22 in. high. This unit has been in service for more than two years on Washington State highways with simulated loads up to the state legal limit of 68,000 lb. GCW.

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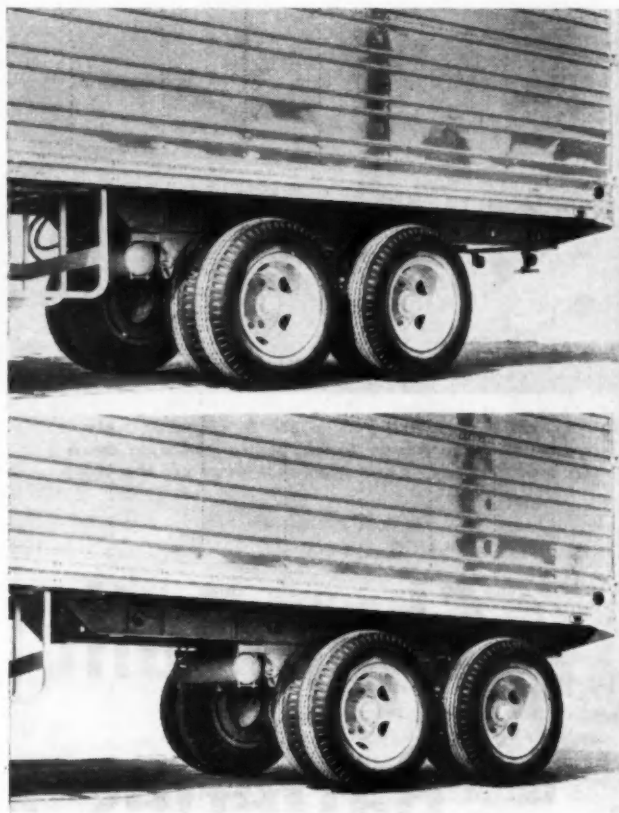
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Latest contender to the light parcel delivery for city work is this French Citroën panel which went on display



International Harvester Company's exhibit included truck displays spanning nearly five decades. Among the earlier vintage vehicles was the International Auto Wagon, one of the first high-wheelers produced at the

company's Akron, Ohio, Works shortly after the turn of the century. Here Ray Labory, left, president of the Los Angeles Automotive Council, and W. K. Stevenson, vice president, pose with the queen of the show.

This Multi-Axle gear developed by Utility Trailer Mfg. Co. was designed to provide for a quick change mechanism to meet varying state weight distribution requirements encountered in inter-regional hauling. Axle position can be changed to compensate for weight changes in cargo by simply loosening six bolts holding the rear gear frame to the subframe and sliding the dual assembly forward or backward as required. Change requires 8 to 10 min. Adjustment is made with the tractor itself after the retaining bolts are removed. Stops located on the frame limit the movement and position the assembly for final tightening.



Battery shop measuring 8 x 20 ft requires only a charging unit, acetylene torch, lead, molds, a workbench and records. One specialist does all the work

Shop-Built Batteries Fill the Bill

By G. Miller
Supt. of Maintenance
Direct-Winters Transport, Ontario

One battery specialist, a small shop department, inexpensive rebuilding equipment enables fleet to save money, reduce failure rate

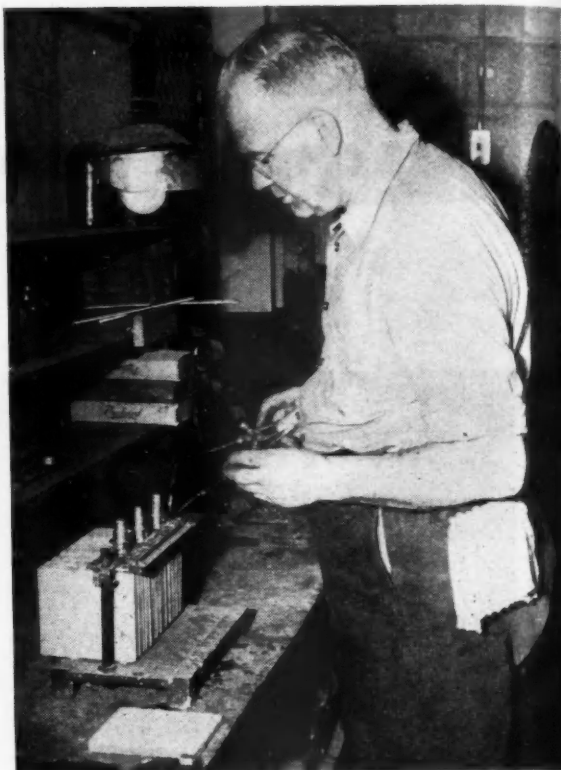
VIT IS recognized at the offset that most fleets are not set up to do their own battery rebuilding. Many times it is not economical in view of labor, time and material for individual fleets to attempt to even repair batteries. However, we feel that we have de-

veloped the practice to a point where it is economically sound to tear down old batteries and rebuild them from the plates outward. . . . We have rebuilt to date a total of 1295 units.

We think our battery building program has saved us thousands of dol-

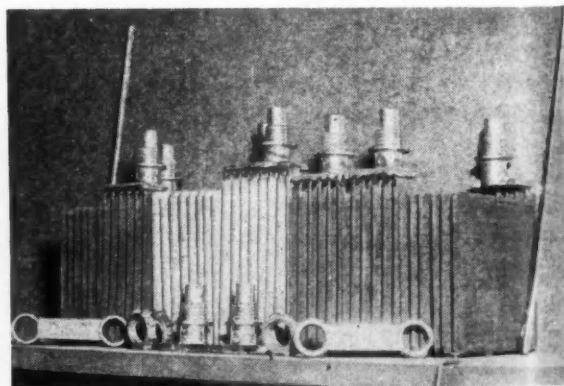
lars. We know that our own batteries average two-thirds more mileage than we were getting with standard units. We are getting an average of sixty thousand miles of wear and tear out of the batteries we build ourselves
(TURN TO PAGE 134, PLEASE)

COMMERCIAL CAR JOURNAL, August, 1952



Battery Man C. Bowen leads a post while the three cells are held in a jig. Rebuilding equipment is simple

Heavy-duty plates and separators are used in all rebuilt units. Posts, sealing nuts and straps are made in shop from molds developed at Direct-Winters



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PUBLICATIONS

FOR YOUR CONVENIENCE USE THE POSTCARD ON NEXT PAGE

L6. Aluminum Bodies

A new publication by the Aluminum Corporation of America gives the story behind the story as far as aluminum bodies are concerned. In a 72-page booklet, Alcoa has provided an introduction to the truck body industry, as it applies to aluminum construction.

A complete discussion of engineering procedures and details are considered in a section which approaches the subject in a discussion of specific sections, members and assemblies. The construction information is complete, including recommendations for the best type of joint, and how these joints may be correctly applied.

The fabrication of a truck body is pictured and described in detail from the cutting of the original forms to the finished body, ready for the road. The best method to be used in production and assembly of aluminum truck bodies is recommended. As an additional handy reference, there is a section covering weights of aluminum, sheet steel and various common metals. You may have a copy by marking L6 on the postcard.

L7. Data Sheets

Published as both a guide to specifying and to speed detailing, a set of data sheets listing and illustrating all standard models of Alemite lubrication fittings has just been issued by the Alemite division of Stewart-Warner Corp. Hydraulic, push type, pin type, button head, dot and flush type fittings

are included in the data sheets. Detailed drawings, with thread and other dimensions, are presented for each fitting, on a one-to-one scale so that, when desirable, direct tracings can be made from the sheets.

For your copy, mark L7 on the postcard.

L8. Movie Catalog

The complete library of motion pictures available from General Motors Corp., has been listed with running time, illustrations, and a resume of the subject covered. General Motors has made the library available on a pay-postage basis as a part of the general public relations program of the company. GM has been guided in the selection and production of the subjects through the opinions of those who have used the film library in the past. For your film catalog, mark L8 on the postcard.

L9. Salvage Welding

The fourth of a series of manuals, "Tool & Die Salvage Welding," a 64-page, illustrated book on welding developments and techniques, is being offered. Over 100 photos, drawings, charts and diagrams are devoted to a detailed discussion of more efficient and more widespread usage of improved tool and die welding procedures. Contents are arranged under such descriptive chapter headings as: Problems in Welding Tool Steels; An Effective Tool and Die Welding and Salvage Program; Tool which can be

Successfully Welded and Salvaged; New Methods in Production Welding of Tools, etc.

Typical of the tools and dies whose salvage problems are covered are: augers, broaches, determining die material, dies, blanking dies, chipped edges, cast iron dies, mechanite dies, composite dies, flash removal, forming dies, kirksite dies, plastic dies, shoe dies, drill repairs, drill jigs, end mill, milling cutters, mill hammer, reamers, slitting saw, small tools, extensions, form tools, high speed tools, shop tools, stripper plates, taps (high speed) tool tipping, and similar examples, all fully illustrated.

Copies may be obtained without charge by marking L9 on the postcard.

L10. Bradley Reprints

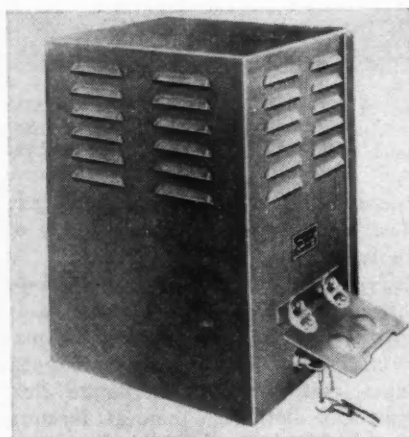
Responding to a popular demand, reprints of a speech made by Albert Bradley, executive vice president of General Motors Corp. before the Fourth Annual Highway Transportation Congress, held in Washington, D. C., are now available. The theme of the congress, sponsored by the National Highway Users Conference, Inc., was "Adequate Roads for a Stronger America."

Mr. Bradley sounded the keynote address of the congress. It was an appeal for grass-roots action to get America out of the traffic muddle. This dramatic and factual speech on our national highway system is available in reprint form.

Mark L7 on the postcard to obtain these informative reprints.

NEW Products

ADDITIONAL DETAILS AVAILABLE UPON REQUEST VIA POSTCARD



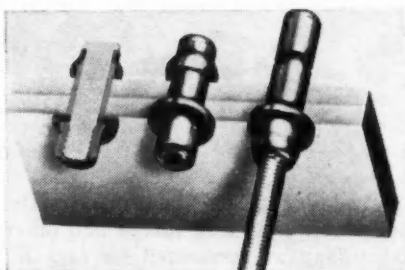
P59. Truck-Cargo Alarm

A constant siren blast greets any attempt to gain access to a cargo compartment or to move a vehicle while equipped with the Victor self-contained cargo alarm system. The unit is a box-like device, mounted on the outside of the body. It contains a storage battery and detecting system, and may be serviced without entering the vehicle. It is secured by a special type lock which resets the device when the alarm sounds.

The alarms were formerly leased and maintained by Victor Truck and Car Alarm Systems, Inc., Clifton, N. J. The manufacturer has now offered the units for sale.

P60. Spray Gun

A new spray gun for fine spraying has been designed for small refinishing jobs, stenciling, blending, highlighting and decorative work. Its spray pattern is medium sized and may be adjusted to pin-point size for extremely close work. The gun is of aluminum and may be used with standard glass jar fluid containers of 2 to 16-oz capacity. The trigger which actuates both the air valve and fluid needle is designed for either right or left hand operators. DeVilbiss Co., Toledo, Ohio.



P61. Blind Lockbolt

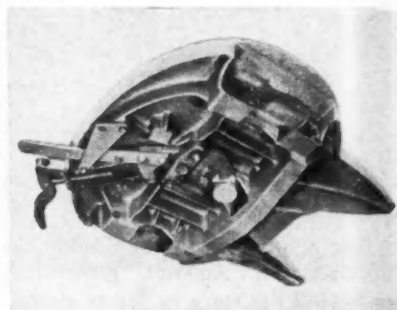
For fabrication or maintenance in the body shop or any other operation involving the use of sheet metals, Huck Mfg. Co., Detroit, has developed a blind lockbolt that claims many advantages. The units consist of a blind collar fitted to a fastener core which is machined to the specified size. The shaft of this core is threaded and the locking device turned up flush to the work. As additional pressure is applied, the blind collar expands, forming a tight seat. The residue of the threaded end is sheared off, and the blind bolt remains locked in place.

P62. Wiper Regulator

Installed on the vacuum hose, a regulator has been marketed which will correct overspeeding and variances of wiper motor operation. With a thumb adjustment, the vehicle operator may control the speed of the wiper arms, eliminate backlash and blade slap. The manufacturer claims that the control will also add up to 30 per cent more blade performance. Anderson Co., Gary, Ind.

P63. Fork Lift Truck

An addition to the line of fork lift trucks made by the Buda Co., Harvey, Ill., has been announced in the models FT 60-24 and FTD 60-24. Powered by gasoline and diesel fuel respectively, the two units have a rated capacity of three tons.



P64. Trailer Coupler

A 34-in. steel fifth wheel has been introduced by Fruehauf Trailer Co., Detroit. The manufacturer claims that the precision machining of all bearing surfaces gives a better contact and makes the unit easy to operate. Instead of using a solid casting, a sectioning principle is employed. The reinforcing ribs of this sectioning plan contribute to the shock-absorbing function as well as to its rigidity. The coupler is 34 in. in diameter and weighs 350 lb.

P65. Oil Filter Kit

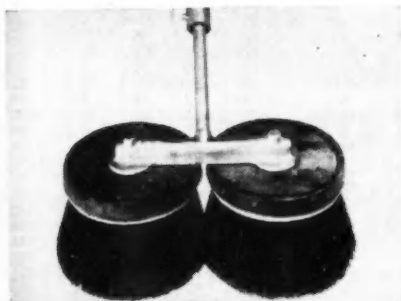
Designed and manufactured to fit all Chevrolet models from 1940, a new oil filter kit has been placed on the market by Purolator Products, Inc.,



Rahway, N. J. The manufacturer states that the filter element will remove sludge and solid contaminants, acids, water and impurities but will leave detergent additives undisturbed.

The latest developments in parts, accessories, equipment and tools for the fleet shop

FILL IN CARD WITH APPROPRIATE NUMBERS FOR MORE INFORMATION

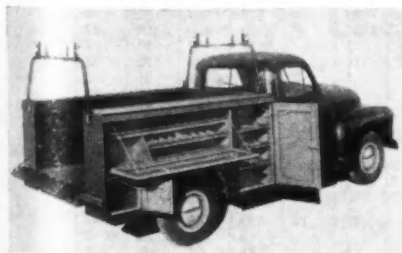


P66. Dual Washer

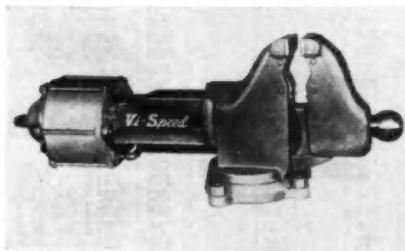
This new washing brush consists of an aluminum telescopic handle, 10 ft of hose, fittings, and a pair of washing heads. The brushes are two independent horsehair and nylon blend round units placed side by side, making it possible to clean twice the area in a given time. Heads may be rotated to give even wear. Tucker Mfg. Co., Cedar Rapids, Iowa.

P67. Service Bodies

Two new service and maintenance bodies have been introduced by McCabe-Powers Auto Body Co., St. Louis, Mo. The body compartments are equipped with shelves, trays, material hooks and parts bins. Removable shelves in each vertical compartment



are padded and furnished with elastic hold-down bands. An overhead rack with adjustable brackets is furnished as standard equipment. The doors are of weathertight construction.



P68. Bench Vises

Van Products Co., Erie, Pa., has announced two new air-operated bench vises, models 610 DP and 1000-DP. Both have a power ratio of 100 to 1, supplied from an 8-in. cylinder and two pistons of 50 sq in., separated by a removable cylinder head. The cylinders are single-acting, incorporating an enclosed spring return. The jaws are 6 in. wide, and open to 10 in. and 11 in. respectively. Model 610 DP is available with stationary or swivel base, and Model 1000-DP is with a swivel base only. Smooth jaw faces are available on both models, and Model 1000-DP incorporate heavy pipe jaws for all sizes through 6 in.

P69. Drum Sanders

A split cylinder for use with belt sanding and grinding material has been marketed by the Carborundum Co., Niagara Falls, N. Y. Short strips of coated abrasives torn from rolls are secured in place around a locking arrangement and an arbor nut locks the unit in place forming a tight wheel. The belt is mounted on a rubber cushion. The device may be mounted on a horizontal or vertical shaft. It operates at a maximum recommended speed of 4000 rpm. The rubber-cushioned unit comes in diameter sizes from 6 1/4 in. up to 16 in. with widths from 1 in. to 4 in. respectively. A felt-cushioned "Cone-Loc" is available in the 6 1/4-in. size with widths of 1 in., to 2 in.



P70. Oil Filter Unit

An on-block oil filter unit has been offered for all Chevrolet cars and trucks except COE models. It attaches directly to the engine block, has a replaceable filter cartridge, and the in-flow and outlet lines are brazed to the case, eliminating threaded fittings. The by-pass filter is located between the oil pump and the bearings on the engine block. The filtration action, the manufacturer states, is even in flow, not affected by temperature changes, and will not remove detergent elements from the oil. Premier Autoware Co., Cleveland, Ohio.

P71. Alignment Gage

As a positive check for king pin inclination, camber and caster angle, Weaver Mfg. Co., Springfield, Ill., has introduced a small gage which works from the spindle nut. It has three spirit levels used in conjunction with carefully indicated scales. The gage, used in combination with any good turning radius gage will give a quick reading of the camber, caster, king pin inclination and turning radius, the manufacturer states.

(TURN TO PAGE 168, PLEASE)

1952 New Truck Registrations by Makes by States*

STATE AND MONTH	Auto-car	Brook-way	Chevy-rollet	Dia-mond T	Divco	Dodge	Federal	Ford	FWD	GMC	Inter-national	Ken-worth	Mack	Peter-blift	Reo	Ster-ling	Stude-baker	White	Willys	All Others	Total	
Alabama	May		1	738	1	202		354		190	130		7		1		56	24	15	2	1,721	
5 Mos.	8	4	2540	12	9	822	2	1435		723	516		68		10		229	107	117	6	6,604	
Arizona	May		199			78		132		83	51		2		4		22	5	21	11	609	
5 Mos.			751	4	1	285	1	548		316	243	5	8	2	13		77	14	92	28	2,388	
Arkansas	May		91			14		56		34	27		1				8	3	21		255	
5 Mos.			2085	3		501		1225	1	755	408		14		2		199	23	118	5	5,319	
California	May	9	1816	36	32	779		1059	7	591	534	28	30	15	14	8	226	44	185	22	5,435	
5 Mos.	47	13	7467	123	114	3450	5	4582	43	2703	2221	123	109	41	68	21	821	205	622	105	22,883	
Colorado	May		306	1	2	72		175	1	78	91				2		23	2	17	2	772	
5 Mos.	1		1444	8	17	329	1	1024	6	450	493	6	30		13		149	19	176	17	4,183	
Connecticut	May	3	183	14	5	73	3	135		54	71		22		7		18	9	21	5	627	
5 Mos.	18	19	859	45	48	380	11	592		217	305		82		30	2	95	43	76	30	2,850	
Delaware	May		51	12		22	2	65		24	16						6	9	5	3	217	
5 Mos.	3	3	335	19	3	104	3	289		81	103		5		1		35	20	12	6	1,022	
Dist. of Col.	May		65			79	1	48		21	7		3		2			8	7	2	248	
5 Mos.	2		328	13	15	179	1	187		97	71		7		10		4	15	16	7	957	
Florida	May		540	5	1	185	2	304		111	129		15		5		84	16	62	3	1,454	
5 Mos.	17	3	2592	44	31	1113	2	1925		621	733		110		35		466	133	271	87	6,183	
Georgia	May		1015	8	5	326		663		246	237		16		3		147	18	40	1	2,725	
5 Mos.		2	3272	31	18	1188	1	2190		928	769	1	82		19		474	74	122	10	9,181	
Idaho	May		156	2	1	54		146		68	81	1	7				16	5	31		558	
5 Mos.			687	5	4	241	5	530		336	308	2	16		4	3	107	14	169	2	2,431	
Illinois	May	8	1054	25	5	294	1	718		229	452		18		9		76	46	48	18	2,997	
5 Mos.	80	3	5323	234	73	2302	11	3918	2	1388	2600		103		65		472	272	275	91	17,212	
Indiana	May		785	16	7	292		664		226	350		25		9		136	40	32	4	2,488	
5 Mos.	4		2820	41	31	1138	4	2014	1	755	1250		65		52		501	211	112	28	9,027	
Iowa	May		525	4	2	125		388		108	205		4		4		50	7	15	2	1,439	
5 Mos.			2267	25	11	651	2	1842		484	1079		15		18		213	50	115	20	6,592	
Kansas	May		838	4	2	164		516	2	252	274				1		55	13	30	3	2,154	
5 Mos.			2397	19	13	641	1	1604	2	719	963		5		10		203	58	112	9	6,750	
Kentucky	May		467	4	2	142	1	324	2	124	132		4		7		38	12	28	5	1,292	
5 Mos.	1		2186	18	5	644	5	1519	2	684	691		12		17		242	48	190	23	6,287	
Louisiana	May		533	4		144		387		165	102		2		3		83	6	30	1	1,461	
5 Mos.	1		2203	12	6	607		1680		688	517		19		6		286	40	117	13	6,175	
Maine	May		197			54	1	131		56	55		9		1		24	2	22		554	
5 Mos.	1	5	708	3	2	197	4	522		239	224		39		5	1	86	12	74	12	2,134	
Maryland	May		259		22	100	1	162		70	98		4		2		28	22	8		778	
5 Mos.	40	17	1310	9	35	526	11	886	2	276	460		63		17		98	71	59	34	3,916	
Massachusetts	May	8	407	8	26	166	1	290	1	90	120		35		5	2	45	34	24	9	1,271	
5 Mos.	63	27	1547	48	63	699	10	1225	3	368	523		132		29	20	178	139	98	39	5,227	
Michigan	May	2	996	18	27	319	1	959		233	159		13		15		66	16	35	4	2,884	
5 Mos.	19	5	4377	48	114	1809	28	4493	2	1126	855		60		85		282	87	169	54	13,414	
Minnesota	May		406	9	1	113		324	2	115	274		9		2		42	3	31	5	1,335	
5 Mos.			2322	19	15	746	4	1565	11	478	1107		23		26		295	32	127	28	6,768	
Mississippi	May		513			130		311	1	153	100		13				68	3	15		1,307	
5 Mos.			2226	3	2	577		1363	2	857	521		20		1		284	20	99	8	5,883	
Missouri	May		733	2	9	165		483		234	204		3		18		56	31	25	6	1,971	
5 Mos.	4		3671	31	61	1080		2344	2	1127	1139	1	20		32	5	301	150	110	22	10,100	
Montana	May		213	4	1	58		162	2	67	88	4	4				32	4	59		698	
5 Mos.			772	18	4	222	1	606	4	259	463	21	10		9		131	11	245		2,776	
Nebraska	May		379	11	1	71	1	267	1	126	211	1	2		1		43	14	43	3	1,175	
5 Mos.			1690	53	8	331	2	1243	8	521	766	32	14		11		185	64	184	10	5,122	
Nevada	May		56			17		21		29	14		6		1		7	1	4		156	
5 Mos.			201	1		87		100		98	77		7		1		28	1	38		632	
New Hampshire	May	1	107	1		22		60		24	39		4				7	5	29	6	307	
5 Mos.	2	4	407	4	6	122	1	276	2	119	147		35		6	1	48	31	79	1	1,297	
New Jersey	May	21	28	460	5	176	2	390	1	158	150		43		4		49	30	30		1,586	
5 Mos.	45	97	2277	42	72	923	15	1872	9	788	843		105		36	5	202	154	168	49	7,742	
New Mexico	May		145			46		167	3	65	49	1	3				39	2	3		525	
5 Mos.	11		863			206		618	6	336	225	3	40	8	4		144	23	73	12	2,575	
New York	May	16	64	1251	26	21	569	15	782	3	298	413		100		32	4	89	86	65	24	3,676
5 Mos.	84	257	4863	174	119	2254	51	3214	24	1346	1803		418		165	23	383	331	350	151	15,990	
North Carolina	May	2	257	664	4	5	174		393	1	161	135		18			97	28	30	2	1,717	
5 Mos.	16		3167	27	24	1236	7	2020	1	853	844		113		16		425	175	169	34	9,127	
North Dakota	May		191			148	1	31		118					1		18	15			574	
5 Mos.			807	2	1	235		856	3	187	605		3		2		94	7	86	3	2,681	
Ohio	May	8	718	7	8	302	4	488	1	176	234		16		9		85	44	45	9	2,152	
5 Mos.	20	2	4325	56	111	1823	46	3336	4	1093	1891		142		98		527	408	354	82	14,118	
Oklahoma	May	1	655	2	1	155		419	2	185	223		5		6		61	23	23	1	1,762	
5 Mos.	5		2539	4	16	686		1810	23	683	868	1	30		12		231	125	104	23	7,140	
Oregon	May	2	257	24	7	99	3	197		115	173		8		3		29	17	48		1,005	
5 Mos.	6		1263	70	17	531	10	857	3	530	577	41	102	34	8	4	142	60	246	52	4,553	
Pennsylvania	May	22	39	1271	15	31	510	4	810	300	526		58		28		107	110	64	6	3,899	
5 Mos.	87	168	4903	74	110	2175	26	3342	1	1276	2031		307		109	6	489	386	296	75	15,841	
Rhode Island	May		65		3	33		70		15	34		2		2		12	4	1		248	
5 Mos.	10	6	280	3	7	131		271		49	143		21		3		33	15	18	3	991	
South Carolina	May		412	1	1	104	4	250		91	227		8		2		41	17	9	5	1,172	
5 Mos.	1	1	2086	11	5	483	6	1106	2	415	682		38		2		187	51	42	31	5,149	
South Dakota	May		192	3		63		129		36	137				1		16	3	17		587	
5 Mos.			821	10	2	210	1	547	1	189	545	1			5		75	4	87	2	2,270	
Tennessee	May		573	2		133		310		135	123		3				60	5	11		1,351	
5 Mos.		21	2772	15	0	926	4	1889	1	879	748		47		3		336					

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When you figure piston costs on a per-mile basis...

Sealed Power

PAX

EBONITED PISTONS

are far ahead of the field!

Sealed Power PAX Pistons are manufactured from genuine Lo-Ex* Aluminum Alloy with silicon base, which dissipates heat most efficiently. Sealed Power's Eboniting process assures a smoother-running engine because piston surface is oil-impregnated, oil-absorbing. Cam-ground, with rugged internal construction for extra strength and fast heat transfer.

Every PAX Piston includes GI-60 Insert for longer top-ring-groove life

Every Sealed Power PAX Piston comes factory-equipped with the exclusive Sealed Power GI-60 Contracting Groove Insert, the only permanent preventive of top-ring groove wear. This cut-away illustration shows how GI-60 forms a heat-treated spring steel shield at the top of the top ring groove.

One fleet owner reports pistons equipped with GI-60 average over 200,000 miles! For complete details, contact your Sealed Power jobber or

SEALED POWER CORPORATION, MUSKEGON, MICHIGAN

**Registered trade mark of Aluminum Co. of America*



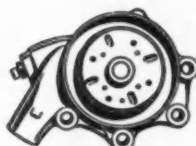
Always use Sealed Power parts for best results



HEAVY DUTY PISTONS—Aluminum or cast iron as indicated, cam-ground, ruggedly designed, heat treated. Equal to or better than original equipment.

WET OR DRY SLEEVES—Machined from closely controlled castings, with exceptionally fine grain and dense molecular structure for long wear.

VALVES—Sealed Power Regular Valves, Free Valves and valve parts are made from the correct grade of chrome nickel alloy steel for each engine, for finest performance and maximum service.



WATER PUMPS—Manufactured from finest quality materials to highest standards. Our line is complete.



KING BOLTS & BUSHINGS—Manufactured from highest quality forgings, and heat treated to meet your exact requirements.



TIE RODS & SHACKLES—Sealed Power Tie Rods, Spring Shackles, and Front Wheel Suspension Parts meet specifications of original equipment.

Dispatching Board Simplifies Fleet Operation

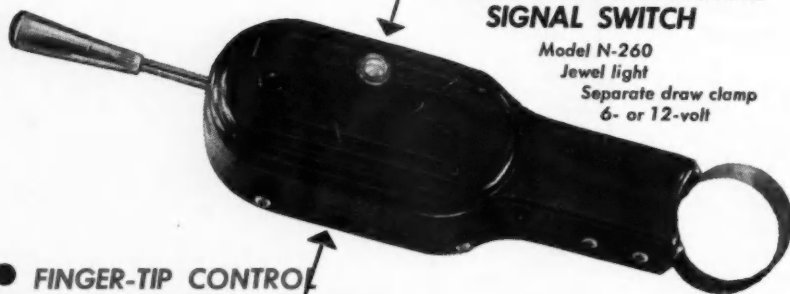
A NEW \$5,000 fleet dispatching board is giving Railway Express Agency closer control of its 504 trailers and 145 tractors operated in the Chicago area. It gives location of trailers, whether they are empty or not, shows the number of tractors available and warns the operators when to equip

vehicles with chains in the event of a sudden snowstorm. It also tells the outside temperature, and has double insurance against time failure with a dual motored electric clock with a device which automatically starts the other motor should the first one fail for any reason.

Unconditionally guaranteed

ARROW'S DIRECTIONAL SIGNAL SWITCH

Model N-260
Jewel light
Separate draw clamp
6- or 12-volt



- FINGER-TIP CONTROL
- BUILT-IN CIRCUIT PROTECTOR
- SIGNAL-WORKING INDICATOR

UNCONDITIONALLY GUARANTEED against defective workmanship. The Arrow N-260 Switch is designed to last the life of the vehicle.

BUILT-IN CIRCUIT PROTECTOR prevents a short circuit in the system from affecting the other lights of a vehicle.

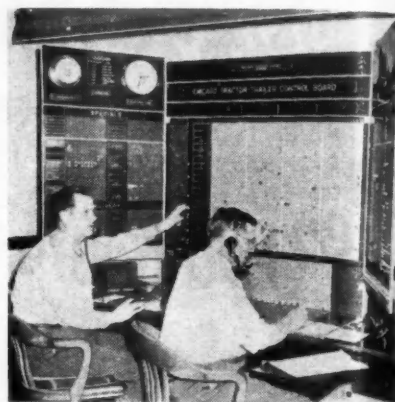
SIGNAL WORKING INDICATOR. This feature alone makes the N-260 Switch invaluable. The jewel light indicates whether your directional signals are working. If one or more lamps is out,

or if there is a break in the lamp circuit, the jewel will fail to light.

ADJUSTABLE HANDLE can be moved in and out to provide finger-tip control for any size steering wheel.

The N-260 Switch can be used with any Arrow Directional Signals or with any system now in use. It is available in complete kits with the new Arrow Class "A" Signals that have the new Magnalume Lens.

ORDER NOW!



Control board shows location of trailers, available tractors and imparts critical information to dispatcher

Inventor of the board is C. H. Ryan, sales agent for the agency at the No Mark and Sales Bureau, Jersey City, N. J. His career with the Express Agency includes that of dispatcher at the Agency's west side terminal in New York City. Mr. Ryan held this position from 1926 to 1935 and a few years later he devised the first express vehicle dispatcher's board used in New York City. An improved model was made later and is currently in use at 219 East 42nd Street, New York City. He was asked to design a board for the Chicago operation with a maximum flexibility to accurately control 250 tractors and 1000 trailers.

The board is 5 ft high and 9 ft wide. It has three panels—the left and right of which are hinged and movable toward the operator.

The right hand panel is marked "Pickup," while the left panel is for "Specials" and "Deliveries."

The center or main board is divided into two sections—upper and lower. The lower section lists all terminals and offices of REA in the Chicago area, and by means of colored buttons, indicates the placement of empty trailers and follows through to the loaded stages.

When the trailer is loaded and hooked to a tractor, it's corresponding button—identified by a number—is moved to the upper portion of the board under "time control" enroute to destination. This arrangement gives the dispatcher an accurate picture of the situation and permits him to plan ahead and make more efficient use of both tractors and trailers.

The board is designed colorwise to reduce eye strain and fatigue. It is especially surfaced with formica in four attractive colors—ivory, mahogany, rose and green, with green predominating. There are 6870 holes in the board and various colored buttons representing tractors and trailers quickly reflect the entire dispatching system as operated in Chicago.

CCJ's Truck Specifications

COMPILED FROM DATA SUPPLIED EACH MONTH BY MANUFACTURERS

KEY TO DEFINITIONS

MAKE AND MODEL

Only Domestic Truck Models are listed.

OPTIONAL UNITS

For the express purpose of best fitting the truck to the individual job most of the models listed can be provided with optional engines, transmissions, axles, etc., and these models when so equipped are considered standard stock models.

CHASSIS LIST PRICE

The chassis list price applies to the minimum standard wheelbase with standard tires and standard equipment. All prices are F.O.B. factory. Chassis list price does not include the price of the Cab unless otherwise noted.

RECOMMENDED

GROSS VEHICLE WEIGHT FOR NORMAL SERVICE

The Gross Weights published herewith are

those supplied by manufacturers as their Recommended Gross Vehicle Weights for Normal Operating Conditions, and are based upon the Maximum Authorized Tire Size listed. In actual practice the manufacturer may either increase or decrease the gross vehicle weight rating when either favorable or unfavorable operating conditions are involved. Since the proper performance of a motor truck depends upon many factors, including grades, road conditions, etc., the gross weights that a manufacturer is prepared to recommend will vary with particular conditions, and the manufacturer's own standard of safety factors. Specific recommendations, therefore, should be obtained from the manufacturer's representative.

CHASSIS WEIGHT

The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with cowl, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in the tank. It does not include the

weight of the Cab. This applies to C.O.E. as well as conventional chassis types. Exceptions are noted.

STANDARD TIRE SIZE

The standard tire size listed is that which is included in the Chassis List Price.

MAXIMUM AUTHORIZED TIRE SIZE

The tire size listed in this column is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is furnished at extra cost, if it differs from the standard size. Dual rears are understood; exceptions noted.

MINIMUM STANDARD WHEELBASE

The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based.

MAXIMUM STANDARD WHEELBASE

The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis maker.

MAXIMUM BRAKE HP.

Maximum Brake Horsepower at Given R.P.M. is actual dynamometer reading without accessories.

GEAR RATIO RANGE

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

TRACTORS

Unless given the designation (N)—meaning not available as a tractor—all standard models may be assumed to be available as tractors. Exclusively Tractor models are designated (T).

KEY TO ABBREVIATIONS

MAKES—ALL

B—Bendix.
BL—Brown-Liste.
Bu or Bud—Buda.
BW—Bendix-Westinghouse.
C—Chevrolet.
Cl or Cla—Clark.
Con—Continental.
Cum—Cummins-Isel.
E—Eaton.
F—Ford.
Fu—Fuller.
G-H—Goodyear-Hawley type.
H—Hotchkiss.
Her—Hercules.
HS—Hall-Scott.
L—Lockheed.
LH—Lockheed front, Wagner "Hi-Tork" rear.
LT—Lockheed type front, Timken rear.
LW—Lockheed front, Wisconsin rear.
M—Midland.
N.P.—New Process.
O or Ow—Own.
Op or Opt—Optional.
Shu—Shuler.
Spi—Spicer.
T or Tim—Timken-Detroit Axle Co.
TW—Timken-Detroit—Westinghouse.

TW—Timken-Detroit—Wisconsin.
Var—Variable.
WG—Wagner Gear.
Wau—Waukesha.
W or Wis—Wisconsin.
Wg—Wagner "Hi-Tork."
Ws—Westinghouse.
WW—Westinghouse or Wagner

WHEELS DRIVEN

2F—Forward unit of Rear Axle Group.
2R—Rear Unit of Rear Axle Group.
4R—Forward and rear units of Rear Axle Group.
6—All wheels.

BRAKES—SERVICE

Location
4—Four Wheels, front and rear.
4r—Four Wheels, rear only.

Type

I—Internal.
X—External.

Operation

A—Air.
H—Hydraulic.

V—Vacuum.
D or Dp—Dual Primary.

BRAKES—HAND

Location

C—Center of double propeller shaft.
2—Rear wheels.
4—Four wheels.
6—Six wheels.
P—Back of Power Divider.
J—Jackshaft.
T—Transmission.
F—Driveshaft.

Type

D—Tru-Stop disk.
I—Internal.
M—Mechanical.
X—External.
PD—Two drums on rear of power divider.

BRAKE DRUMS

Material

A—Cast alloy iron.
A—American Car Foundry.
C—Cast iron.
Cc—Composite Front, Cast Iron in rear.

Ce—Centrifuge.
CI—Copper iron.
Co—Composite.
D—Dayton.
E—Ermalite.
G—Gunite.
N—Nickel iron.
S—Steel.

(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drums.)

FRAME

Type

C—Channel.
T—Channel tapered front and rear.
L—Channel reinforced with liner.
B—Channel reinforced with both liner and fishplate.
P—Channel reinforced with plate.
TL—Channel tapered front and rear reinforced with liner.
D—Drop Center.
TF—Tapered front.
A—Straight section sidemembers, lined with oak inserts.

Z—Reinforced (X) member frame, box type sections.

REAR AXLE

Final Drive and Type

B—Bevel.
CD—Chain Drive.
F—Full-floating.
H or Hy—Hypoid.
d—Dual range axle.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
3/4—Three Quarters Floating.
1/2—Semi-Floating.
T—Torque Tube.

GEAR RATIOS

(**) Only one ratio.

Drive and Torque

H—Hotchkiss (springs).
R—Radius Rods.
L—Parallel Torque Rods.
T—Torque Arm.

GOVERNOR STANDARD

V—Yes.
N—No.

KEY TO REFERENCES

c.f.—Cab Forward design.
c.o.e.—Cab-Over-Engine design.

(D)—Diesel-engine equipped.
(T)—Designed for tractor use only.

(C)—Ford or Chevrolet Models.
(R)—Remanufactured Fords.

A—Denotes "Includes Cab" when used with weights or prices.

BROWN

*—All six engines listed are available on all five models of trucks.
•—Steel frame only. Also available with Aluminum frame 10x3 1/2 x 1 1/2.
†—Many variations available with Fuller or Spicer transmissions.

CHEVROLET

†—Forward control chassis for Door-to-Door delivery bodies. These chassis do not have cowl.
•—Includes spare tire, full fuel tank and cooling system.
A—7.50/20 can be used on the front with no decrease in G.V.W. when 8.25/20 are used on dual rear wheels.
•—Own Loadmaster engine available at extra cost.
A—8.25/20 front tires are required when 9.00/20 dual rears are used.
††—Diameter: (Average) Front, 2.6858; Front Center,

2.7168; Rear Center, 2.7478; Rear, 2.7788. Total Length 5 1/2.

†—4 speed transmission available.
††—Also available in 5.14 ratio.
•—5.43 available.
••—Two speed axle available.

CORBITT

•—Available with optional tires and axles for less G.V.W. rating.
††—Also available with Cummins HRB 600, HRB 600 and NHB 600.

CROSLY

••—Pick-up truck only; panel delivery 1360.
†—Front 1.375 x 1.312; 3 Center 1.375 x .870; 1 Rear 1.500 x 1.499.

DODGE

•—Front only; Rear 7.00/16S.
•—Front only; Rear 8.25/16.
•—Front only; Rear 6.50/20S.
•—Front only; Rear 7.50/20.
•—Front only; Rear 9.00/20.
†—Front only; Rear 10.00/20.
†—Rear of transfer case.

DUPLEX

†—Torque Divider, Timken T70-2 speed.

FEDERAL

•—Diesel engine obtainable.
†—Five speed transmission obtainable.

†—Auxiliary transmission Spicer 6231B with 3 forward speeds.

†—Auxiliary transmission Spicer 703F with 3 forward speeds or 8031.

†—55M, 60M and 65M have single speed, double reduction rear axle.

†—Radius rods obtainable.

†—For wheelbases below 196" —9 x 3 1/2 x 1 1/2.

•—For shorter wheelbases, 10 x 3 1/2 x 1 1/2.

††—Diesel engine obtainable.

††—Overdrive optional.

††—Torque Divider Timken T70-2 speed, T50 obtainable.

†—SW 3013 obtainable.

†—SW 3010 or SD 3020 obtainable.

•—Rear only.

†—Torque Divider Timken T70-2 speed, T50 obtainable.

†—SW 3013 obtainable.

†—SW 3010 or SD 3020 obtainable.

•—Rear only.

KENWORTH

††—Timken T13129 PA Trail-Axle.

OSHKOSH

•—Includes cab.
•—1091 cu. in.
••—Hydraulic coupling.
††—Buda 6DC844 optional.
††—Other Cummins 6 cylinder engines optional.
††—Includes cab and dual tires on front, center and rear axles.
•—Dependent upon engine.

REO

•—Model 331-OA and 331-OA LPG engines can be furnished.
†—Two speed axle available.
†—Double reduction and 2 speed available.

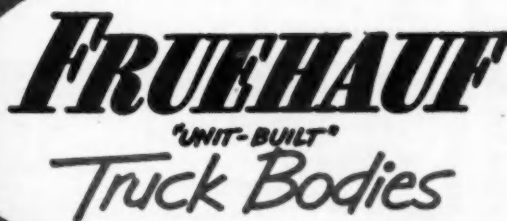
STERLING

†—Rear only; Front 11.00/24.
†—Rear only; Front 11.00/22.
•—Own FJ three speed auxiliary transmission furnished.
†—Timken T70 two speed torque divider furnished.
†—Parking brake at rear of auxiliary transmission.
•—Rear only; Front 12.00/24.
•—Rear only; Front 14.00/24.
•—Rear only; Front 16.00/24.
•—1125 cu. in.
††—Own model FJ three speed auxiliary transmission furnished.
††—Timken T76 two speed transfer case furnished.

(Turn to Next Page, Please)

for
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Turn to Page 84 - Please

FRUEH

Aug. 1952

See References and Abbreviations See Page 81

Comments

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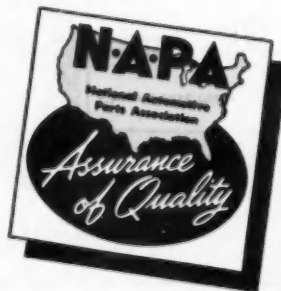
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(Continued from Page 84)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE	Gross Vehicle Weight (For Normal Service)	(See definition)	TIRE SIZES		Chassis Weight (See definition)	ENGINE DETAILS						MISSION		REAR AXLE		AXLE		SERVICE				C-A Dimensions (Min. Std. W. B.)	Side Rail Dimensions																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
						Standard Front and Rear	Dual rear S-single rear		No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb.-ft.	Max. Brake H.P. at R.P.M.	Main Bearings Number and Diameter Given	Governor Standard	Make and Model	Forward Speeds	Make and Model	Gear and Type	Drive & Torque	Gear Ratio	Range in High	Make and Model	Location Type			Operation	Lining	Drum Area	Drum Material	Hand Location	Type																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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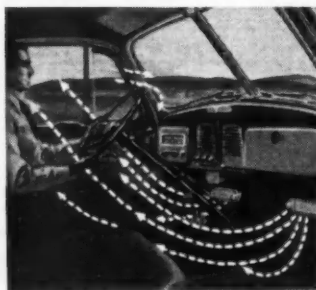
Line Number	MAKE MODEL	Chassis List Price	WHEEL-BASE		TIRE SIZES		ENGINE DETAILS						TRANS-MISSION		REAR AXLE		FRONT AXLE	BRAKES			FRAME											
			Minimum Standard	Maximum Standard	Gross Vehicle Weight (See definition) for Normal Service	Standard Front and Rear	Standard D-dual rear	No. of Cylinders	Stroke and Bore	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M.	Number and Diameter of Main Bearings	Governor Standard	Make and Model		Forward Speeds	Make and Model	Clear and Type		Drive & Torque	Clear Ratio	Range in High	Make and Model	Location Type	Operation	Lining Area	Drum Material	Hand Location	C/A Dimensions (Min. Std. W. B.)	Side Rail Dimensions	Type
1	Sterling-Cont'd (D) TA1000	173	181	30000	32500	11,00/20	11,00/20	6-3x16	743x15	657x200	2100/7	4-1x13	YFU4A8-3865	12 Tm S200P	W41H	622 1034A	622 1034A	622 1034A	2F	15.9	91-9	70-1	FE9000P	W41H	622 1034A	622 1034A	622 1034A	622 1034A	622 1034A	77	9x3x13	A
2	(D) TA1010	173	181	30000	32500	11,00/20	11,00/20	6-3x16	743x15	657x200	2100/7	4-1x13	YFU4A8-3865	12 Tm S200P	W41H	622 1034A	622 1034A	622 1034A	2F	15.9	91-9	70-1	FE9000P	W41H	622 1034A	622 1034A	622 1034A	622 1034A	622 1034A	77	9x3x13	A
3	(D) TA1011D	173	181	30000	32500	11,00/20	11,00/20	6-3x16	743x15	657x200	2100/7	4-1x13	YFU4A8-3865	12 Tm S200P	W41H	622 1034A	622 1034A	622 1034A	2F	15.9	91-9	70-1	FE9000P	W41H	622 1034A	622 1034A	622 1034A	622 1034A	622 1034A	77	9x3x13	A
4	(D) TA1012	173	181	30000	32500	11,00/20	11,00/20	6-3x16	743x15	657x200	2100/7	4-1x13	YFU4A8-3865	12 Tm S200P	W41H	622 1034A	622 1034A	622 1034A	2F	15.9	91-9	70-1	FE9000P	W41H	622 1034A	622 1034A	622 1034A	622 1034A	622 1034A	77	9x3x13	A
5	(D) TA1013	173	181	30000	32500	11,00/20	11,00/20	6-3x16	743x15	657x200	2100/7	4-1x13	YFU4A8-3865	12 Tm S200P	W41H	622 1034A	622 1034A	622 1034A	2F	15.9	91-9	70-1	FE9000P	W41H	622 1034A	622 1034A	622 1034A	622 1034A	622 1034A	77	9x3x13	A
6	(D) TA1014	173	181	30000	32500	11,00/20	11,00/20	6-3x16	743x15	657x200	2100/7	4-1x13	YFU4A8-3865	12 Tm S200P	W41H	622 1034A	622 1034A	622 1034A	2F	15.9	91-9	70-1	FE9000P	W41H	622 1034A	622 1034A	622 1034A	622 1034A	622 1034A	77	9x3x13	A
7	(D) TA1015	173	181	30000	32500	11,00/20	11,00/20	6-3x16	743x15	657x200	2100/7	4-1x13	YFU4A8-3865	12 Tm S200P	W41H	622 1034A	622 1034A	622 1034A	2F	15.9	91-9	70-1	FE9000P	W41H	622 1034A	622 1034A	622 1034A	622 1034A	622 1034A	77	9x3x13	A
8	(D) TA1016	173	181	30000	32500	11,00/20	11,00/20	6-3x16	743x15	657x200	2100/7	4-1x13	YFU4A8-3865	12 Tm S200P	W41H	622 1034A	622 1034A	622 1034A	2F	15.9	91-9	70-1	FE9000P	W41H	622 1034A	622 1034A	622 1034A	622 1034A	622 1034A	77	9x3x13	A
9	(D) TA1017	173	181	30000	32500	11,00/20	11,00/20	6-3x16	743x15	657x200	2100/7	4-1x13	YFU4A8-3865	12 Tm S200P	W41H	622 1034A	622 1034A	622 1034A	2F	15.9	91-9	70-1	FE9000P	W41H	622 1034A	622 1034A	622 1034A	622 1034A	622 1034A	77	9x3x13	A
10	(D) TA1018	173	181	30000	32500	11,00/20	11,00/20	6-3x16	743x15	657x200	2100/7	4-1x13	YFU4A8-3865	12 Tm S200P	W41H	622 1034A	622 1034A	622 1034A	2F	15.9	91-9	70-1	FE9000P	W41H	622 1034A	622 1034A	622 1034A	622 1034A	622 1034A	77	9x3x13	A
11	(D) TA1019	173	181	30000	32500	11,00/20	11,00/20	6-3x16	743x15	657x200	2100/7	4-1x13	YFU4A8-3865	12 Tm S200P	W41H	622 1034A	622 1034A	622 1034A	2F	15.9	91-9	70-1	FE9000P	W41H	622 1034A	622 1034A	622 1034A	622 1034A	622 1034A	77	9x3x13	A
12	(D) TA1020	173	181	30000	32500	11,00/20	11,00/20	6-3x16	743x15	657x200	2100/7	4-1x13	YFU4A8-3865	12 Tm S200P	W41H	622 1034A	622 1034A	622 1034A	2F	15.9	91-9	70-1	FE9000P	W41H	622 1034A	622 1034A	622 1034A	622 1034A	622 1034A	77	9x3x13	A
13	(D) TA1021	173	181	30000	32500	11,00/20	11,00/20	6-3x16	743x15	657x200	2100/7	4-1x13	YFU4A8-3865	12 Tm S200P	W41H	622 1034A	622 1034A	622 1034A	2F	15.9	91-9	70-1	FE9000P	W41H	622 1034A	622 1034A	622 1034A	622 1034A	622 1034A	77	9x3x13	A
14	(D) TA1022	173	181	30000	32500	11,00/20	11,00/20	6-3x16	743x15	657x200	2100/7	4-1x13	YFU4A8-3865	12 Tm S200P	W41H	622 1034A	622 1034A	622 1034A	2F	15.9	91-9	70-1	FE9000P	W41H	622 1034A	622 1034A	622 1034A	622 1034A	622 1034A	77	9x3x13	A
15	(D) TA1023	173	181	30000	32500	11,00/20	11,00/20	6-3x16	743x15	657x200	2100/7	4-1x13	YFU4A8-3865	12 Tm S200P	W41H	622 1034A	622 1034A	622 1034A	2F	15.9	91-9	70-1	FE9000P	W41H	622 1034A	622 1034A	622 1034A	622 1034A	622 1034A	77	9x3x13	A
16	(D) TA1024	173	181	30000	32500	11,00/20	11,00/20	6-3x16	743x15	657x200	2100/7	4-1x13	YFU4A8-3865	12 Tm S200P	W41H	622 1034A	622 1034A	622 1034A	2F	15.9	91-9	70-1	FE9000P	W41H	622 1034A	622 1034A	622 1034A	622 1034A	622 1034A	77	9x3x13	A
17	(D) TA1025	173	181	30000	32500	11,00/20	11,00/20	6-3x16	743x15	657x200	2100/7	4-1x13	YFU4A8-3865	12 Tm S200P	W41H	622 1034A	622 1034A	622 1034A	2F	15.9	91-9	70-1	FE9000P	W41H	622 1034A	622 1034A	622 1034A	622 1034A	622 1034A	77	9x3x13	A
18	(D) TA1026	173	181	30000	32500	11,00/20	11,00/20	6-3x16	743x15	657x200	2100/7	4-1x13	YFU4A8-3865	12 Tm S200P	W41H	622 1034A	622 1034A	622 1034A	2F	15.9	91-9	70-1	FE9000P	W41H	622 1034A	622 1034A	622 1034A	622 1034A	622 1034A	77	9x3x13	A
19	(D) TA1027	173	181	30000	32500	11,00/20	11,00/20	6-3x16	743x15	657x200	2100/7	4-1x13	YFU4A8-3865	12 Tm S200P	W41H	622 1034A	622 1034A	622 1034A	2F	15.9	91-9	70-1	FE9000P	W41H	622 1034A	622 1034A	622 1034A	622 1034A	622 1034A	77	9x3x13	A
20	(D) TA1028	173	181	30000	32500	11,00/20	11,00/20	6-3x16	743x15	657x200	2100/7	4-1x13	YFU4A8-3865	12 Tm S200P	W41H	622 1034A	622 1034A	622 1034A	2F	15.9	91-9	70-1	FE9000P	W41H	622 1034A	622 1034A	622 1034A	622 1034A	622 1034A	77	9x3x13	A
21	Studebaker... 2R5	112	112	4600	2125	6.00/168	6.50/168	6-3x16	1707	0.138	85-4000	2-3x15	NWA 680233	3 Owa 680233	HY	H4 09-4.80	Owa 678860	W61H	170 276	CO21	40	7x2x14	T	7x2x14	7x2x14	7x2x14	7x2x14	7x2x14	40	7x2x14	T	
22	(D) TA1029	112	112	4600	2125	6.00/168	6.50/168	6-3x16	1707	0.138	85-4000	2-3x15	NWA 680233	3 Owa 680233	HY	H4 09-4.80	Owa 678860	W61H	170 276	CO21	40	7x2x14	T	7x2x14	7x2x14	7x2x14	7x2x14	7x2x14	40	7x2x14	T	
23	(D) TA1030	112	112	4600	2125	6.00/168	6.50/168	6-3x16	1707	0.138	85-4000	2-3x15	NWA 680233	3 Owa 680233	HY	H4 09-4.80	Owa 678860	W61H	170 276	CO21	40	7x2x14	T	7x2x14	7x2x14	7x2x14	7x2x14	7x2x14	40	7x2x14	T	
24	(D) TA1031	112	112	4600	2125	6.00/168	6.50/168	6-3x16	1707	0.138	85-4000	2-3x15	NWA 680233	3 Owa 680233	HY	H4 09-4.80	Owa 678860	W61H	170 276	CO21	40	7x2x14	T	7x2x14	7x2x14	7x2x14	7x2x14	7x2x14	40	7x2x14	T	
25	(D) TA1032	112	112	4600	2125	6.00/168	6.50/168	6-3x16	1707	0.138	85-4000	2-3x15	NWA 680233	3 Owa 680233	HY	H4 09-4.80	Owa 678860	W61H	170 276	CO21	40	7x2x14	T	7x2x14	7x2x14	7x2x14	7x2x14	7x2x14	40	7x2x14	T	
26	(D) TA1033	112	112	4600	2125	6.00/168	6.50/168	6-3x16	1707	0.138	85-4000	2-3x15	NWA 680233	3 Owa 680233	HY	H4 09-4.80	Owa 678860	W61H	170 276	CO21	40	7x2x14	T	7x2x14	7x2x14	7x2x14	7x2x14	7x2x14	40	7x2x14	T	
27	(D) TA1034	112	112	4600	2125	6.00/168	6.50/168	6-3x16	1707	0.138	85-4000	2-3x15	NWA 680233	3 Owa 680233	HY	H4 09-4.80	Owa 678860	W61H	170 276	CO21	40	7x2x14	T	7x2x14	7x2x14	7x2x14	7x2x14	7x2x14	40	7x2x14	T	
28	(D) TA1035	112	112	4600	2125	6.00/168	6.50/168	6-3x16	1707	0.138	85-4000	2-3x15	NWA 680233	3 Owa 680233	HY	H4 09-4.80	Owa 678860	W61H	170 276	CO21	40	7x2x14	T	7x2x14	7x2x14	7x2x14	7x2x14	7x2x14	40	7x2x14	T	
29	(D) TA1036	112	112	4600	2125	6.00/168	6.50/168	6-3x16	1707	0.138	85-4000	2-3x15	NWA 680233	3 Owa 680233	HY	H4 09-4.80	Owa 678860	W61H	170 276	CO21	40	7x2x14	T	7x2x14	7x2x14	7x2x14	7x2x14	7x2x14	40	7x2x14	T	
30	(D) TA1037	112	112	4600	2125	6.00/168	6.50/168	6-3x16	1707	0.138	85-4000	2-3x15	NWA 680233	3 Owa 680233	HY	H4 09-4.80	Owa 678860	W61H	170 276	CO21	40	7x2x14	T	7x2x14	7x2x14	7x2x14	7x2x14	7x2x14	40	7x2x14	T	
31	(D) TA1038	112	112	4600	2125	6.00/168	6.50/168	6-3x16	1707	0.138	85-4000	2-3x15	NWA 680233	3 Owa 680233	HY	H4 09-4.80	Owa 678860	W61H	170 276	CO21	40	7x2x14	T	7x2x14	7x2x14	7x2x14	7x2x14	7x2x14	40	7x2x14	T	
32	Ward La Fr. D-1	149	220	25000	35000	10.00/20	11.00/20	6-3x16	1275	1.150	150-2000	2-3x16	YFU 54330	5 Tm S-200	B	RR	H 4.33-6.67	Tm 27061	O41H	645 1060A	T1D	72	10x3x14	DL	10x3x14	10x3x14	10x3x14	72	10x3x14	DL		
33	(D) TA1039	149	220	25000	35000	10.00/20	11.00/20	6-3x16	1275	1.150	150-2000	2-3x16	YFU 54330	5 Tm S-200	B	RR	H 4.33-6.67	Tm 27061	O41H	645 1060A	T1D	72	10x3x14	DL	10x3x14	10x3x14	10x3x14	72	10x3x14	DL		
34	(D) TA1040	149	220	25000	35000	10.00/20	11.00/20	6-3x16	1275	1.150	150-2000	2-3x16	YFU 54330	5 Tm S-200	B	RR	H 4.33-6.67	Tm 27061	O41H	645 1060A	T1D	72	10x3x14	DL	10x3x14	10x3x14	10x3x14	72	10x3x14	DL		
35	(D) TA1041	14																														



2-ton shown with 15-foot high stake—1½-ton also available

A STUDEBAKER TRUCK PAYS OFF IN LOW COST PULLING POWER

Big loads or small loads consistently cost less to haul in a Studebaker truck.
You get marvelous gas mileage with either of the two great Studebaker truck engines ...
the high efficiency Econ-o-miser ... the high torque Power Plus.
You save on repairs, thanks to America's most wear-resisting truck craftsmanship.



A wide range of choice from pickups to heavier tonnage models is available to you in the comprehensive Studebaker truck line. Frames, springs, axles—all "stress" points in each truck—excel in ruggedness.

Cab steps are fully enclosed inside the doors for sure-footed safety. The cab floor is conveniently low. The wide doors have automatic "hold-open" stops and close securely on tight-gripping rotary latches.

Refreshing currents of air stream into the cab when the foot-controlled floor ventilators are opened up. Seat has "finger-tip" control—Adjusto-Air cushion. Steering post gearshift on the light duty models.

On the job day-in, day-out! Stop in at any Studebaker showroom. Examine the solid construction of a Studebaker truck. You can see at once why it stands up so enduringly.

© 1952, Studebaker, South Bend 27, Indiana, U.S.A.

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ALWAYS
In every famous long life of the air conditioning conditions repair, years economic your business present when gives your co-

LOCKE
NeRoL.
ELECTR

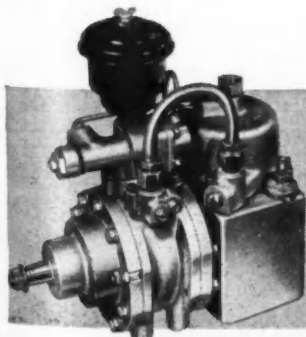
Wagner Air Brakes

ARE
AVAILABLE IN
1. Air-Over-Hydraulic
or
2. Straight Air
SYSTEMS

These two types of Wagner Air Brake systems offer many operating advantages. The STRAIGHT AIR system for cam type foundation brakes provides plenty of controllable power and the AIR OVER HYDRAULIC system combines many advantages that result in a material reduction in maintenance and operating costs. These Wagner systems meet the requirements of all types of vehicles and assure highest braking efficiency.

ALL WAGNER AIR BRAKE SYSTEMS HAVE THE ROTARY AIR COMPRESSOR

In every Wagner Air Brake System you get the famous Wagner Air Compressor, known for its long life, dependability and high efficiency. It is of the *Rotary* type—thousands of small overlapping air compression impulses occur per minute assuring an abundance of air under all operating conditions. Simple in construction, easy to install and repair, the Wagner Rotary Compressor will give years of dependable service and provide real economy in Preventive Maintenance. Be sure of your brakes—Install Wagner Air Brakes on your present vehicles and always specify WAGNER when ordering new equipment. Catalog KU-201 gives complete information. Mail coupon for your copy.

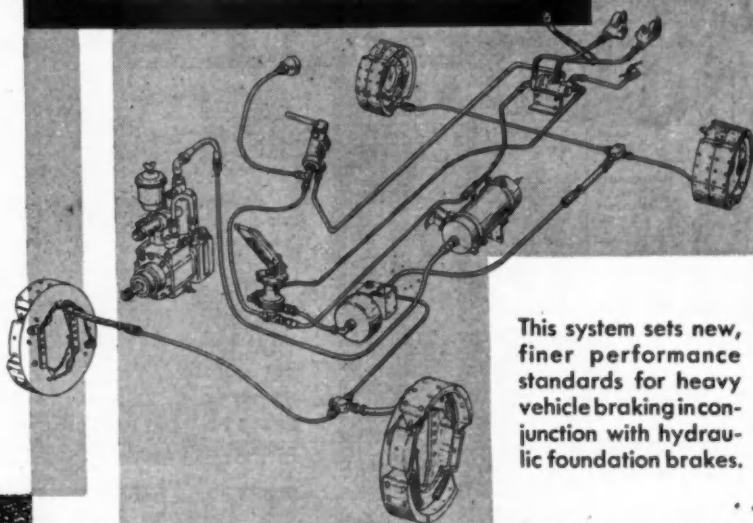


*The Most
Reliable
Air Compressor*

Wagner Products Serve the
Automotive and Electrical Industries

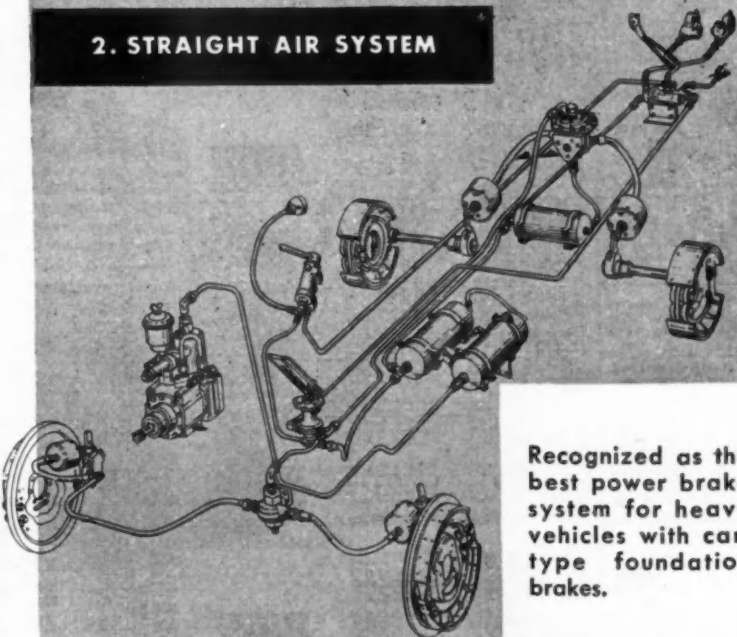
LOCKHEED HYDRAULIC BRAKE PARTS and FLUID
NoRol . . CoMaX BRAKE LINING . . AIR BRAKES . . TACHOGRAPHS
ELECTRIC MOTORS . . TRANSFORMERS . . INDUSTRIAL BRAKES

1. AIR-OVER-HYDRAULIC SYSTEM



This system sets new, finer performance standards for heavy vehicle braking in conjunction with hydraulic foundation brakes.

2. STRAIGHT AIR SYSTEM



Recognized as the best power brake system for heavy vehicles with cam type foundation brakes.

Used as original equipment
by truck and bus manufacturers!

Wagner Air Brake Users are our Biggest Boosters!

Wagner Electric Corporation
6470 PLYMOUTH AVE., ST. LOUIS 14, MO., U.S.A.
(Branches in principal cities in U.S. and in Canada)

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ STATE _____
We operate _____ Vehicles
(NUMBER)
K52-4

GET YOUR COPY
OF THE *NEW*
**Wagner
Air Brake**

DESCRIPTIVE
CATALOG
NOW!



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466
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FEDERAL MOTOR TRUCK COMPANY • DETROIT 9, MICHIGAN, U. S. A.



6 Models • Over 500 Combinations • 1½ to 35 tons • Gasoline or Diesel • Including Six-Wheel

(Continued from Page 92)

Line Number	MAKE AND MODEL	Chassis List Price			WHEEL-BASE	Gross Vehicle Weight (Or as Vehicle Service Weight)	Chassis Weight (See definition)	TIRE SIZES		ENGINE DETAILS										TRANSMISSION		REAR AXLE				FRONT AXLE	BRAKES				FRAME																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
		Minimum Standard	Maximum Standard	D-dual rear Single rear				Standard Front and Rear	Maximum Tire Size (Duals not less used)	Make and Model	No. of Cylinders	Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M.	Number and Diameter Main Bearings	Governor Standard	Make and Model	Forward Speeds	Make and Model	Gear and Type	Drive & Torque	Gear Ratio	Range in High		Make and Model	Location Type	Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	Side Rail Dimensions	Type																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

For Key to References and Abbreviations See Page 81

Bendix ^{automotive} Electric Fuel Pump

World's Finest Protection against VAPOR LOCK



Built-in Pressure Release . . . No flooding . . . Assures satisfactory Re-Starts on Hottest Days

Dependable as no Fuel Pump has ever been under all operating conditions

Performance Proven. Years of research, development, and rigorous tests have been made on this pump.

Longer Life—No Pressure Drop. No bearings or levers to wear; no diaphragm to fatigue.

Delivers More Gallons Per Hour. Can deliver more than 30 gallons output per hour. Two or more pumps can be manifolded.

Economical Operation. Low original cost and long dependable life make this fuel pump the best buy on the market.

Improves Low Temperature Starting. Tests prove that engines start at 10 to 15 degrees lower with the Bendix Fuel Pump.


Eliminates Vapor Lock. Assures a constant, dependable supply of fuel in the hottest weather.

Low Power Requirements. Only 7 watts at maximum fuel delivery.

Dependable Operation at 75° Below Zero. That's why the U. S. Army Ordnance Corps chose it to pump fuel to heaters in the extreme cold of the Arctic.

Easy to Install—Easy to Service—Tamper-Proof. Simple two-bolt mounting. No adjustments. Electrical system, sealed in helium, insures longest possible life.

Light Weight—Compact. A giant in output but a midget in weight—one pound, thirteen ounces.

WRITE TO
Eclipse Machine Division
Elmira, New York • Division of 

PROOF...

that MOHAWK tires can take it!

Even under the gruelling conditions described by this user, Mohawk Truck Tires prove outstanding because of their built-in quality... Yet these finer tires cost no more, and include models for every type of bus and truck operation.

MOHAWK BIG CHIEF

Extra shelves, tapered toward the bottom of the tread recesses, prevent stones from lodging and staying in the tire.



E. S. MATHER, Inc.

SAND and GRAVEL
LIMESTONE and FILL DIRT



Phone
Farmington 1599

3077 SHIAWASSEE STREET

FARMINGTON, MICHIGAN

Heavy Dump TRUCKING

January 16, 1952.

Wy-Oak Tire Service,
8555 Birwood,
Detroit 4, Mich.

Attention: Mr. R. Robbins

Dear Sir:

You may be interested in knowing that we have been using Mohawk Truck tires during the past six years and according to our cost records, we find Mohawk tires to be outstanding in quality and performance.

The main thing that we are interested in is low cost per mile. Mohawk Truck tires give us this low cost.

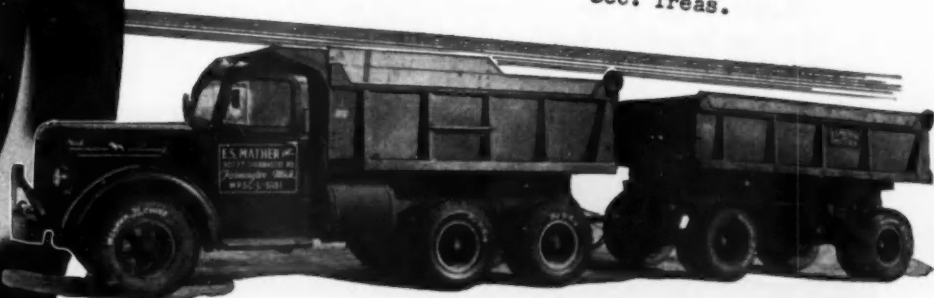
In our operation of hauling salt to distant Michigan points during the winter and our huge operation on sand and gravel during the summer, we need tires that are tough and dependable. Mohawk is that tire.

If you can continue to maintain your high standard of quality, you may well rest assured that E. S. Mather Inc. will continue to purchase Mohawk Truck tires.

Very truly yours,

E. S. Mather, Jr.

E. S. Mather, Jr.
Sec. Treas.



THE MOHAWK RUBBER COMPANY

Plants: AKRON, OHIO • LITTLETON, COLORADO

Export Department: 1819 Broadway, New York 23, N.Y. • Cable "Mohawk" New York

CCJ News Reports

Continued from Page 31

condition the surface before actual test operations get under way.

The "WASHO Road Test" was inaugurated by the Western Association of State Highway Officials, to be made over a section of Idaho highway specially constructed for the test. Plans and specifications for its construction were prepared by the Idaho Department of Highways in accordance with

the directives of the standards committee of WASHO. A complete outline of the composition of the test road was reported in the February, 1952, issue of COMMERCIAL CAR JOURNAL, Page 51.

Two loops will be built, each with 1900-ft tangents, 100 feet apart and connected at the ends with 150-ft radius turnarounds. The two loops will be identical in design; each tangent of

each loop will contain five different pavement thicknesses, in order to evaluate past, present and possible future design practice.

The trucks will operate in pairs, four vehicles on each test loop, two in the outside lane and two in the inside lane. On one loop, single-axle combinations will be used, with 18,000-lb axle loads running on the inside lane and 22,400-lb axle loads on the outside lane. On the other loop, tandem axle combinations will be used with 32,000-lb tandem-axle loads on the inside lane and 40,000-lb tandem-axle loads on the outside.

One round trip will be 6600 feet (1¼ miles) and the turnarounds have been designed with superelevation to permit an average speed on the loop of approximately 30 mph. The trip will take about 2½ minutes. Since there will be two combination vehicles in each lane, the pavement will be subjected to two heavy-truck loads every 2½ minutes.

The test traffic will be operated approximately 18 hours (15 hours net travel time) six days a week; so under ideal conditions each section will undergo about 720 truck-trailer applications per day, or 18,750 per month. It is planned to continue the test traffic for a total of six months, part this fall, until winter weather makes it impractical to continue testing, and the balance in the spring of 1953.

New Autocar Diesel

The Autocar Co., Ardmore, Pa., has developed a new Diesel-powered tractor, a companion vehicle to a light-weight, gasoline-powered job the company brought out in the heavy-duty field late last year. While the diesel, which Autocar has designated Model DC-65-T, weighs only 9750 lb, it has a gross combination rating of 50,000 lb.

The power plant is a Cummins diesel with overhead valves. The cylinder block is cast integral with the crankshaft and provided with removable cylinder liners. The engine develops 150 hp at 2500 rpm.

The new diesel tractor is produced in two wheelbase lengths: 142 in. and 159 in. Standard tires are 10.00/20, but the wheels can take up to 11.00/22.

TTMA Holds Summer Session

The Fourth Annual Summer meeting of the Truck Trailer Manufacturers Assn., Inc., was held Friday and Saturday, July 18-19, at the Edgewater Beach Hotel, Chicago. The program approved included a discussion of "How Long Must Government Controls Last?" by Courtney Johnson, until recently, Director of the Motor Vehicle

(TURN TO PAGE 98, PLEASE)

COMMERCIAL CAR JOURNAL, August, 1952



Here's the spark plug designed for truck and tractor service. Hastings electrodes are *shrouded*—completely protected from the hot flame sweep. And there are *two* ground electrodes—to give you at least twice the life. So you can

use a hotter plug to overcome fouling conditions, and still reduce electrode erosion!

Hastings offers other important features, too: an H. T. aluminum oxide insulator; a solid copper, non-loosening gasket; a wider gap setting. Each and every plug is X-ray inspected for proper construction and heat flow. Each is Performance Rated.

Write Dept. C for illustrated catalog. Spark Plug Division, Hastings Manufacturing Co., Hastings, Michigan. Makers of Spark Plugs, Piston Rings, Oil Filters, Casite, Drout.



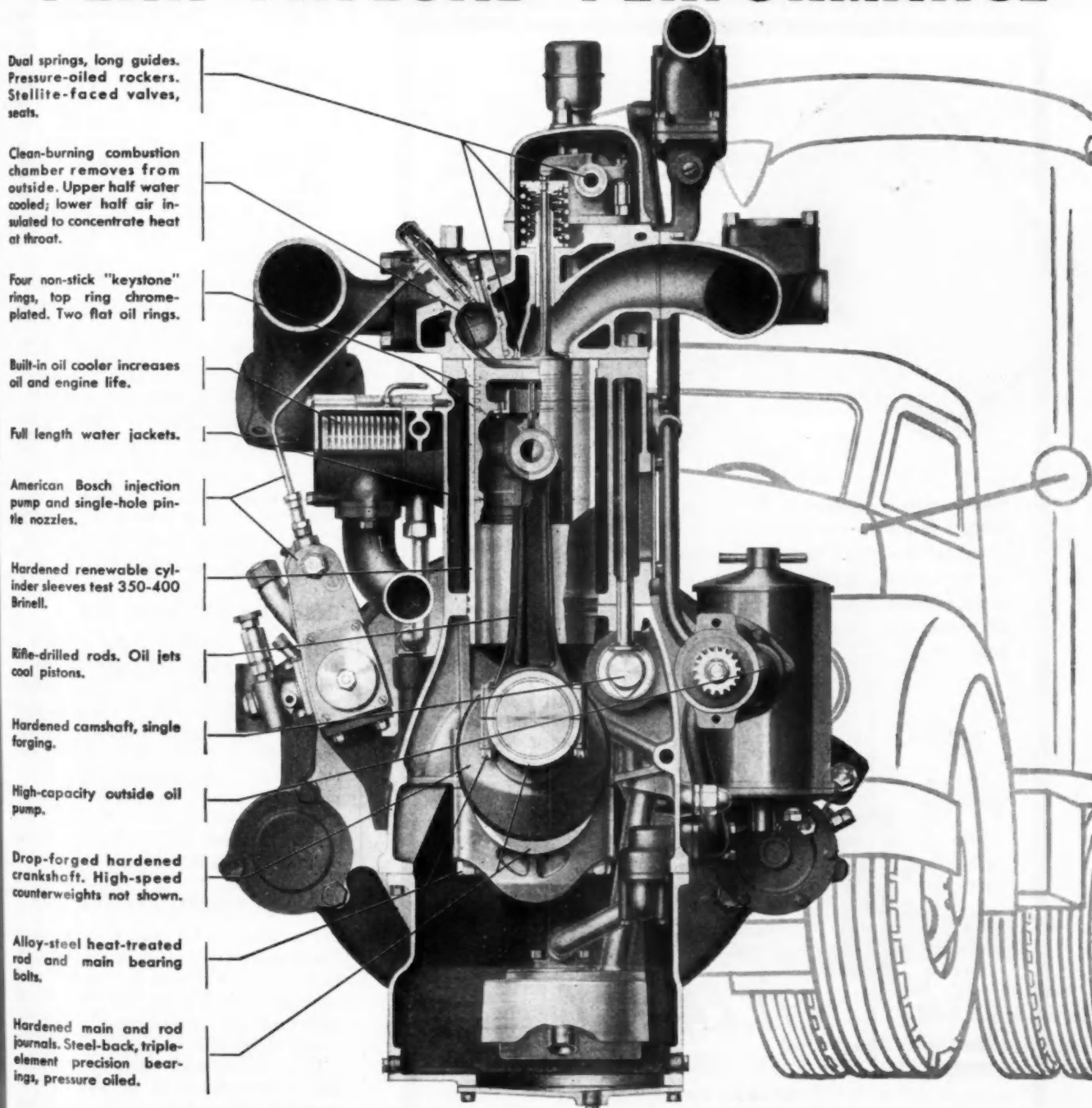
HASTINGS

Aero-type Shrouded

THE DOUBLE-DUTY SPARK PLUG FOR HEAVY DUTY USE

WAUKESHA DIESELS

**feature-packed truckers' engines for
PEAK PAYLOAD PERFORMANCE**



Waukesha High Duty Diesel, Model 148-DK—six cylinders, 5¼-in. bore x 6-in. stroke, 779 cu. in. displacement, peak hp 200. For full details, send for Bulletin 1532.

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WAUKESHA MOTOR COMPANY, WAUKESHA, WIS. • NEW YORK • TULSA • LOS ANGELES

COMMERCIAL CAR JOURNAL, August, 1952

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News Reports

Continued from Page 96

Division, NPA. Also on the program was E. J. "Luke" Lucas, Chief, Truck Trailer Branch, NPA, who discussed the trailer production program.

A Progress Report on PAR, Project-Adequate Roads, was given by Arthur Butler, national secretary of the PAR Committee. In addition, a new feature was introduced to TTMA at this meeting when A. M. Baltzer, Director, Asso-

1952 Domestic Truck Factory Sales by G.V.W.*									
	5,000 lb. and less	5,001-10,000	10,001-14,000	14,001-16,000	16,001-19,500	19,501-26,000	Over 26,000	Total	
January.....	30,803	15,649	4,873	16,666	4,909	8,323	3,971	85,194	
February.....	30,519	15,506	5,055	17,416	3,856	8,239	4,080	84,670	
March.....	34,151	16,896	5,037	18,104	3,843	9,290	4,712	92,033	
April.....	39,783	19,614	4,743	17,358	3,401	9,241	4,451	97,591	
May.....	35,916	20,006	4,555	14,891	3,119	9,237	3,125	90,949	
Five Months, 1952.....	170,171	87,671	24,263	84,435	19,126	44,330	20,339	450,337	
Five Months, 1951.....	250,871	106,692	45,170	88,153	24,140	29,719	16,530	561,275	

* Automobile Manufacturers Association.

ciation Committee, National Safety Council, explained what an association can do for its members in the field of plant safety.

1952 Truck Trailer Shipments*

	May	Five Months
Vans		
Insulated and refrigerated.....	284	1,383
Steel.....	85	391
Aluminum.....	199	1,002
Furniture.....		
Steel.....		
Aluminum.....	91	590
All other closed-top.....	1,368	6,939
Steel.....	762	4,046
Aluminum.....	606	2,893
Open-top.....	172	1,020
Steel.....	87	505
Aluminum.....	85	515
Total—Vans.....	1,915	9,942
Tanks		
Petroleum.....	358	1,970
Food.....	18	129
L.P.G.....	6	61
All other.....	27	198
Total—Tanks.....	409	2,357
Pole, pipe and logging		
Single axle.....	75	327
Tandem axle.....	162	706
Total.....	237	1,033
Platforms		
Racks, livestock and stake.....	532	2,409
Grain bodies.....	103	539
Flats (all types).....	706	2,831
Total—Platforms.....	1,341	5,959
Low-bed heavy haulers.....	500	2,600
Dump trailers.....	99	393
All other trailers.....	110	945
Total—Complete trailers.....	4,611	23,286
Converter dollies.....	219	418
Trailer chassis.....	335	1,690
Total—Trailers and Chassis.....	5,165	25,396

* Industry Division, Bureau of the Census.


Expansion Write-offs Cut

No more tax amortization certificates are to be granted for expansion of facilities for production of tank barges. This government decision is qualified, of course, by the usual "unless another emergency develops." Cut-off date was set for July 15. At the time the decision was made (in mid-June) something like 334 applications had been received. This, said, DTA, should take care of any facility shortage.

Package Size May be Restored

Pressure will be brought on the new Congress to restore the larger size and higher weight limits for parcel post packages. Meanwhile, the Post Office Department is getting ready to ask for a new increase in parcel post rates. It will be ready with facts and figures about December. These will be expected to show that the 25 per cent increase of last year produced \$100,000,000—only enough to offset increased costs of pay raises, etc.

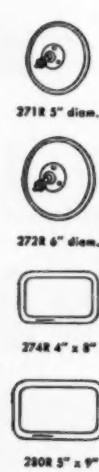
(TURN TO PAGE 240, PLEASE)



282R Rubber-Rimmed 6" x 9" mirror, extends from 15" to 27". Universal clamp-on or bolt-on mounting. With mirror brace arm.

*Over-all

Heavy duty—Rubber Rimmed Truck Mirrors featuring replaceable glass is an added feature of Yankee's expanding truck safety equipment line. Baked black enamel finish, ball type heads, vibration-free mounting...they're built to last!



271R 5" diam.

272R 6" diam.

274R 4" x 8"

280R 5" x 9"

If it's a

YANKEE

IT LASTS!

Write for catalog today

Yankee Metal Products Corp., Norwalk, Conn.

Three New Tractors Introduced by Mack

THREE new tractor are being introduced by Mack Motor Truck Corp. in response to operators' demands for equipment to carry bigger payloads and still stay within legal limits. By adding to tractor power and cutting chassis weight, Mack has produced three models, the A-54S, A-54T and A-55T, which will allow a bigger percentage of the gcw to be made up of payload. This combination of more power and reduced weight will, the company believes, help operators answer the problem of fixed weight limits and increasing operating costs.



Two of Mack's three new tractors—the A-54T, powered by the company's 158 hp gasoline engine; the A-55T whose powerplant is the Mack 165 hp diesel engine



Mack's third new tractor, the A-54S six-wheeler, powered by the company's 158 hp gasoline engine and equipped with the Mack Balanced Bogie and Power Divider

Ratings on these new tractors range from 45,000 to 58,000 lb gcw. Mack's 158-hp gasoline engine powers the A-54S and A-54T. The A-55T is powered by Mack's 165-hp diesel. Both the A-54T and A-55T are four-wheeled tractors and the A-54S is a six-wheeler.

Connecting rods are angle-split, which permits use of larger crankpins. Cap misalignment is eliminated by

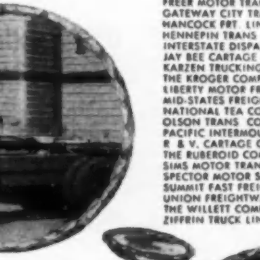
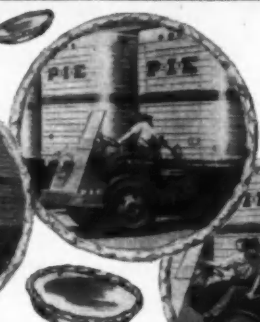
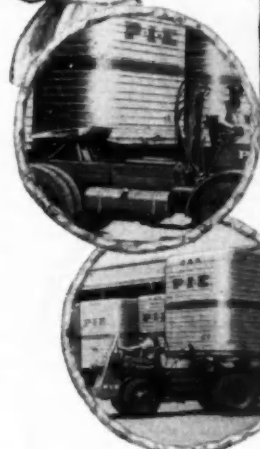
tongue-and-groove which locks bearing cap and rod together and relieves cap-screws of shear. Hollow, air-cooled

crankpins and extra-large crankshaft journals, the company states, contribute to even running and long life.

Constant and uniform engine temperature is stressed as helping lubrication and increasing ring, piston and cylinder life. Cooling water flow is directed so that the coldest water reaches the hottest parts first, maintaining close uniformity of temperature throughout the engine. Thermostatically controlled warm bypass and radiator shutters are used to maintain constant temperatures.

(TURN TO NEXT PAGE, PLEASE)

"Easy as P-I-E with our Speedy BARTLETT HYDRAULIC 5th WHEEL"



AMONG THE MANY USERS—
AZTEC FREIGHT LINES
BRIGGS TRANSFER CO.
BROWN EXPRESS
CAMPBELL "66" EXPRESS
CONSOLIDATED FREIGHT CO.
CONSOLIDATED FREIGHTWAYS
DARLING & COMPANY
DENVER-CHICAGO TRUCKING CO.
DOHRN TRANSFER CO.
EASTERN MOTOR EXPRESS
FOSTER FREIGHT LINES
FREER MOTOR TRANSFER CO.
GATEWAY CITY TRANSFER CO.
HAWCOCK FRT. LINES
HENNEPIN TRANS. CO.
INTERSTATE DISPATCH, INC.
JAY BEE CARTAGE CO.
KARZEN TRUCKING CO.
THE KROGER COMPANY
LIBERTY MOTOR FREIGHT
MID-STATES FREIGHT LINES
NATIONAL TEA CO.
OLSON TRANS. COMPANY
PACIFIC INTERMOUNTAIN EXPRESS
R & V. CARTAGE CO.
THE RUBENSON COMPANY
SINKS MOTOR TRANSPORT LINES
SPECTOR MOTOR SERVICE
SUMMIT FAST FREIGHT
UNION FREIGHTWAYS
THE WILLET COMPANY
ZIPPERIN TRUCK LINE

The NEW IMPROVED Hydraulic Lifting 5th Wheel Eliminates Cranking While Spotting—Cab Controlled. No Climbing In and Out of Cabs — Cuts Spotting Time to 1/3

Does the Work of an Extra Man!



Lifts Supports 14 inches Off the Ground Takes the Hard Work Out of Spotting
Makes Possible Closer Docking of Trailers
HUNDREDS OF USERS FULLY RECOMMEND THEM!

These Units Shipped Anywhere for Local Installation on Any Make of Tractor

BARTLETT TRAILER CORPORATION

3080 ARCHER AVE. • CORNER OF ASHLAND • CHICAGO 8 • VIRGINIA 7-1160

Mack Models

Continued from Page 101

A wide selection of transmissions is available for the new tractors. These include direct or overgear types and the ten-speed duplex transmission with either the mono-shift or two-lever shift. Five-speed direct or overgear transmission is standard equipment on the gasoline-powered A-54T and A-54S. Ratios range from 8.05 to 1 in first to 1.00 to

1 in fifth for the direct transmission and from 6.74 to 0.79 to 1 for the overgear type. On the diesel-powered A-55T, the ten-speed duplex transmission is standard equipment. On the other models it is available as optional extra equipment.

Frames are made of pressed carbon steel. Three box-girder cross-members are said to provide exceptional stiffness in the A-54T and A-55T frame and to help keep all major components in alignment. On the A-54S, one box-girder, two channels and one I-beam reinforce the frame which also has a

combination frame reinforcement and gusset structure over the bogie axles.

Dual reduction final drive is provided on all three models. Available ratios for the four-wheel tractors are 5.74, 6.26 and 7.23 to 1. For the A-54S, equipped with Mack's Balanced Bogie and Power Divider, ratios are 5.77, 6.45, 7.32, 8.15 and 9.02 to 1 with the last three recommended for dumper and mixer service. The axle shafts are made of chromium-molybdenum steel, heat-treated by Mack's exclusive graduated method for strength and long life. Banjo housing is described as being light, strong and stiff. The banjo is a composite comprising pressed steel yoke with spindles of seamless steel tubing and closed back. Axle shafts are involute free-splined at both ends to give true full-floating action and four times the resistance to impact afforded by ordinary types, the company claims.

Only CRESCENT WIRY JOE #98 Plastic Primary Wire gives you these 9 advantages!



1. Easier to loom because of smaller outside diameter and slick surface.
2. Easier to trace because of permanent color of plastic insulation
3. Easier to handle because of greater flexibility.
4. Can be wiped clean with cloth.
5. Impervious to oil, grease, Diesel fumes.
6. 5 to 7 times more resistant to abrasion and acids.
7. Will not support flame.
8. In handy dispensing box.
9. Ideal for trailer cable hook-up.



THE CRESCENT COMPANY, INC., Pawtucket, Rhode Island

Remember! Neglected wires cause fires! Check the wire on every truck—replace old or worn primary wire with genuine Crescent Wiry Joe No. 98 Plastic Primary Wire.

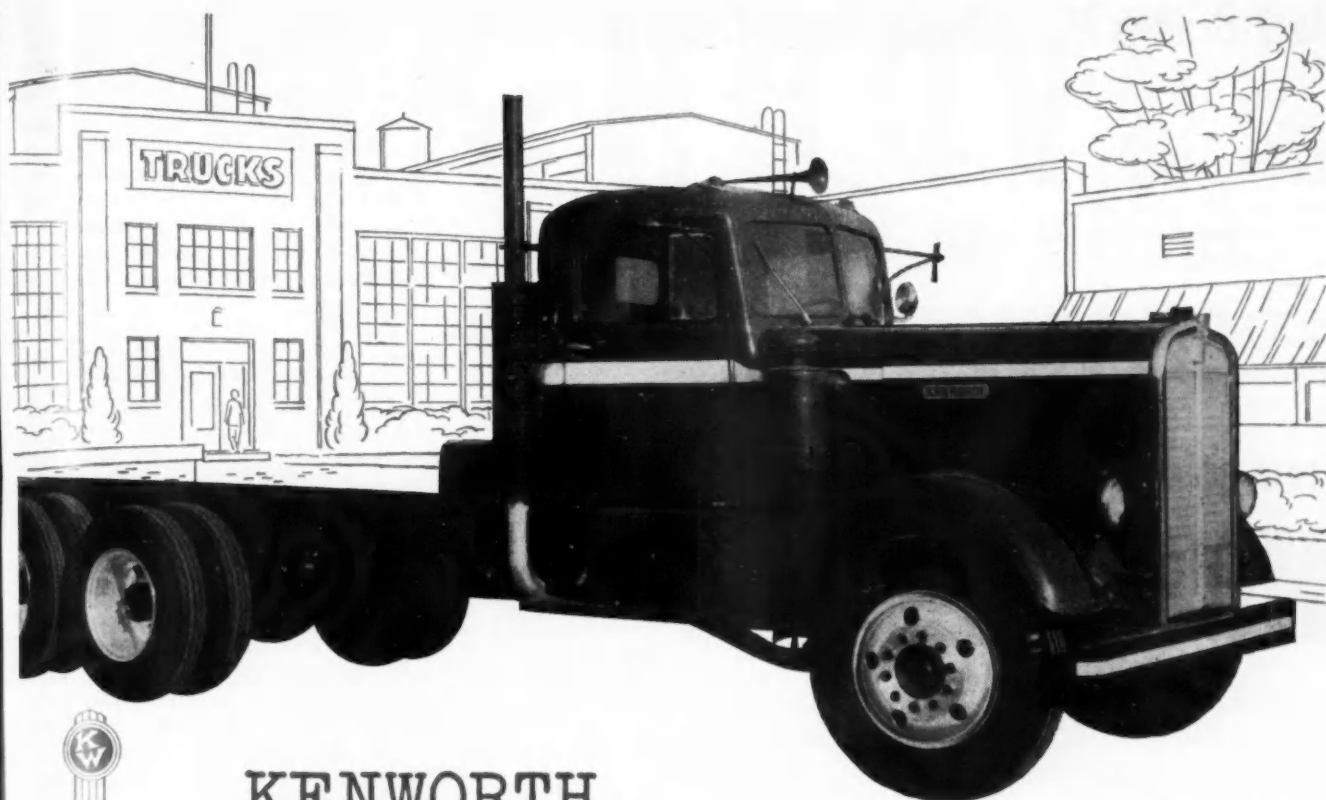
White Presents Oil Well Giant

A NEW model Sterling-White chassis developed for oil field operations and other heavy-duty services has been announced by the White Motor Company's Sterling division at Milwaukee, Wis. This Sterling-White, model SB 3255D, is engineered for the handling of drilling rigs and other oil-field machinery. Variations of this model are also available for logging and other off-the-road operations.

A 200-hp diesel engine provides the power for this new model. Dual transmissions, a four-speed main and three-speed auxiliary, give the operator a wide selection of gear ratios. Top speed is 42 mph in overdrive and, with both transmissions in low gear, total reduction is more than 120 to 1, resulting in a road speed as low as 2½ mph at full engine-governed speed.

The dual rear axle unit is equipped with a suspension system which is designed to carry heavy loads in off-the-road operation in oil field service. Equalizer beams are mounted below the rear springs. This feature provides for equal distribution of the load, regardless of bumps, holes or other road irregularities and serves as a lever to help lift the load over the bumps, the manufacturer states.

Standard tire sizes are 11.00-24 front and 12.00-24 dual rear mounted on ventilated steel disc type wheels. The steering is of the hydraulically power-actuated type.



KENWORTH lightens tractor 1970 lbs. with ALUMINUM

Kenworth Motor Truck Corporation was using Alcoa Aluminum in cabs, hoods, gasoline tanks, tank brackets and frame castings as early as 1936. In response to the demands of profit-wise fleet operators, Kenworth has continued to engineer new aluminum applications into their famous heavy-duty tractors.

Today, Kenworth saves as much as 1,970 pounds on a unit by using Alcoa Aluminum Alloys for frame rails, front and rear hubs, wheels, unit power and auxiliary transmission cases, rear axle housings, frame castings, hoods, cab sheathing and engine parts.

The records piled up by Kenworth all-aluminum-option trucks on the West's toughest runs prove aluminum's ruggedness. The backlog of orders for Kenworth lightweight aluminum tractors proves they're money-makers, money-savers.

Ask your truck manufacturer to show you how aluminum pays off before you order new equipment. Or get in touch with your Alcoa sales engineer. He'll show you how properly designed aluminum parts save weight, add strength.



Free Booklet

36-page *Payload Proof* booklet will help you plan more profitable light weight equipment. Write: ALUMINUM COMPANY OF AMERICA, 1876-H Gulf Building, Pittsburgh 19, Penna.

ALCOA

First in Aluminum

The Metal that LASTS



ALCOA TELEVISION—CBS Network, 6:30 to 7:00 P.M. EDT Every Sunday on most stations—8:30 to 9:00 P.M. in far West.

COMMERCIAL CAR JOURNAL, August, 1952

Bad Brakes? ... Check Your Drivers

Continued from Page 63

per cent of the rear end accidents. Only 47.8 per cent of the rear end accidents occurred after dark.

My opinion is that these statistics do not indicate defective brakes, or lack of maintenance, so much as drivers expecting the impossible of their brakes. In the foreseeable future we cannot expect better materials than we

have now. *Since our problem will not wait for the development of better materials, now unknown, we must learn how better to use our present materials. In other words, we must pay more attention to braking.*

In going down mountain grades, speed is again the predominant factor in causing high drum surface tempera-

tures, fading brakes, and rapid lining wear. Five tons of truck going down a certain hill will generate the same quantity of heat whether it goes down at 20 or 40 mph. At 40 mph, however, the brakes must generate the heat twice as fast so a higher temperature is required to drive it into the drum. Also, the slower you go down the hill, the more heat the drum can get rid of on the way down and the cooler it will be at the bottom.

Brake Synchronization

A DRIVER cannot be expected to use all of his brakes all of the time if he must apply his tractor brakes with his foot and his trailer brakes with his hand. Even if he tries to use all of them all of the time he cannot get them timed right and one or the other will do most of the work and get most of the wear. More attention is now being paid to synchronization; that is, having the brakes on all axles controlled by the foot pedal, all of them build up at the same rate, and all reach full power at the same time. This introduces the element of build-up time. With a slow build-up time and synchronized brakes, the stop may even be longer than if the trailer brakes, or the tractor brakes, build up fast or "come in ahead" as the drivers say. This element of build-up time should be considered entirely independent of synchronization because the shortest possible stop occurs with synchronized brakes which build up to full power quickly.

Next, take the case of an actual test where a tractor fitted with vacuum-hydraulic brakes was really too light and small for the van type trailer with which it was tested. Its brakes were overloaded. Even though they were relined and the power cluster overhauled before the test, they could not be expected to make a short stop in spite of the ability of the trailer brakes to slide wheels. Even so, the overall braking ability was "average" or better, and would be considered adequate under most normal driving conditions, but the stopping distance would not meet the requirement of the laws presently on the books.

Measurement of the tire force at each wheel indicated that the tractor did 45 per cent of the braking and the trailer 55 per cent. The stopping distance test, however, showed the trailer to be doing 64 per cent of the work of stopping and the tractor only 36 per cent. This difference is due to the fact that the trailer brakes reached full power before the tractor brakes did.

This was not synchronized braking. The trailer brakes were "coming in ahead" of the tractor, many people

(TURN TO PAGE 106, PLEASE)

NOW IS THE TIME TO THINK ABOUT HODELL TRUCK CHAINS



Don't wait until demand overwhelms the supply ... order your truck chains today. Dependable and rugged Hodell Truck Chains are built for maximum wear and protection ... and they're locked securely under the roughest and toughest road conditions by the patented Hodell ONE-HAND Fastener.

Hodell Truck Chains are made in all sizes of Regular, Extra Heavy

and Bar-Reinforced. For dual pneumatics, Hodell Chains come in three types: for outer tire only ... or full-width cross chain to cover both tires ... or with triple side chains and staggered cross chains for tops in traction. Write us today about your requirements.

HODELL CHAIN COMPANY
Cleveland 3, Ohio

Division of The National Screw & Mfg. Co.



FASTENERS



HODELL CHAINS



CHESTER HOISTS

YORK-HOOVER

60 YEAR POLICY PAYS OFF IN LOWER
"PER PACKAGE" DELIVERY COSTS FOR YOU



OUR 60 YEAR POLICY—

Strict adherence to an iron clad policy established in 1892 . . . the policy of producing only quality merchandise at a fair price . . . at all times . . . and under any conceivable economic condition . . . pays off in lower delivery costs for you . . . whether your fleet operation is "door-to-door" or "over-the-road."



HOW IT BENEFITS YOU—

Consistent with this policy . . . factors that contribute to the satisfaction of our customers are . . . engineering the body for the specific job to be done . . . meticulous attention to all metal fabricating details . . . plus strict adherence to rigid inspection standards.



CUSTOMER SATISFACTION—

You can rely with confidence on York-Hoover Truck Bodies because you not only get top quality workmanship, but enjoy lower maintenance costs and efficient performance at all times. For lower "per package" delivery costs . . . buy York-Hoover!

1952...OUR **60**TH ANNIVERSARY YEAR

YORK-HOOVER CORPORATION
YORK, PENNSYLVANIA

Bad Brakes?

Continued from Page 104

think this is desirable. It leads to scuffed trailer tires and excessive wear of the trailer brakes. Furthermore, while the combination can often stop in a shorter distance on dry pavement adjusted in this way, it is not good on ice or on slippery pavement. When the pavement is slippery, it is far better to have all brakes build up in power at the same rate, and to reach maximum at the same time.

It is often a temptation to make a better "show" with a shorter stop by having the trailer "come in ahead" but this is not synchronizing the brakes. Don't be misled by the shorter and more impressive stop. The tire-force tests indicated a stop of 23 ft to be possible. The fact that it was not attained is due to the time required to build up to full braking power. If the trailer brakes had built up at the same rate as the tractor brakes, the length of stop would have been about 40 to 42 ft instead of the actual 36 ft.

Many exaggerated ideas exist as to

the benefits of having trailer brakes "come in ahead" of tractor brakes. These ideas have developed from having trailer brakes come in late, which is bad—so bad as to justifiably cause some misconception as to how far ahead of the tractor they should "come in." Really, the principal benefit of having the trailer "come in" ahead is to insure that it does not "come in" late. The ideal way is to have the trailer "come in" exactly with the tractor.

The reasons for this have to do with skidding and jack-knifing, not with obtaining the shortest stopping distance. If the tractor builds up faster than the trailer, the result, on slippery pavement, is apt to be a jack-knife. This type of jack-knife is sudden, and is caused by the drive wheels sliding to one side. The driver will usually claim he lost steering control, in this type of jack-knife, because it happens too suddenly for him to correct for it by steering.

The other type jack-knife results from the trailer building up first, but gives the driver a better chance to recover by "gunning" the engine and/or releasing the brakes. This happens when the trailer wheels reach a slide with the tractor just "holding back." The rear of the trailer then starts to swing over to one side or the other, or "come around" as the driver says. He can see this in the mirror, and it takes place slowly enough so that he has a good chance to bring it out before it reaches jack-knife proportions.

In another actual case of a 2-axle tractor and a single-axle trailer, take the drive axle weight as 100 per cent and its brake torque also as 100 per cent. The trailer axle carried 115 per cent weight and 115 per cent brake torque, but the front axle, with a weight of only 31 per cent had a brake torque of 65 per cent. The drivers complained of having too much front brakes, and their complaints prompted the investigation.

An "underbraked" drive axle has some advantage but at the sacrifice of stopping distance. A combination with such a distribution of braking will be less apt to "jack-knife." A better plan is to reduce the front brake capacity more nearly in line with the axle loading, and have all brakes reach full power at the same time. Then it is up to the driver to declutch when he applies his brakes in order to avoid jack-knifing. Even in braking, it is difficult to "have your cake and eat it," to provide for the shortest possible stopping distance without depending on the skill of the driver to avoid a jack-knife.

END

Please Resume Reading Page 62

COMMERCIAL CAR JOURNAL, August, 1952

ERE IS

Longer Contact Life for YOUR ENTIRE FLEET

COPPER CONDUCTOR STRIP

STAINLESS STEEL FLOATING SPRING

OVER 50% MORE CONTACT AREA

OVERSIZE BUSHING

NO SLIP BUSHING

METAL FRAME EMBEDDED INTO RECESS... CAN'T SLIP!

ECHLIN
Heavy Duty
Contacts
for
ALL THREE
Ignition Systems



ECHLIN Ignition



CONTACTS
COILS • CONDENSERS
& OTHER AUTOMOTIVE
ELECTRICAL PARTS

ECHLIN MANUFACTURING COMPANY
234 EAST STREET • NEW HAVEN 5, CONN.

"OUR HEAVY, long distance fleet equipment doesn't get the frequent starts and stops that many fleets do, so our battery problem is slightly different from the majority. But our men drive at night, on long, lonely stretches with expensive cargoes," says Fred J. Harrison, Foreman, Night Hawk Freight Service, St. Louis, Missouri.

"Dependability is what we demand in

the batteries we install in our trucks. That's why we settled on Auto-Lite 'Sta-ful' Batteries — and a talk with our drivers will convince you that our choice was right.

"Not only do Auto-Lite 'Sta-ful' Batteries often exceed their rated life, but our records show they need little maintenance, compared with most batteries. Yes, we'll stick to Auto-Lite."



AUTO-LITE

batteries

THERE IS AN AUTO-LITE BATTERY FOR EVERY USE — CARS • TAXICABS • TRUCKS • BUSES • TRACTORS • DIESEL MOTORS

Tailored Forms Cut Leased-wire Costs

Continued from Page 67

is necessary is to re-run the tape either for office reproduction or for further transmission over the leased wire set-up to another office.

The accompanying reproduction of our most-used standard forms shows how a great deal of information has been packed into a minimum amount of space. It is not necessary to go into the

details of this form, since obviously each operation must of necessity develop the form best adapted for its own specific use.

But there is one feature of this form that is particularly noteworthy. The upper left hand corner of the "top" or first sheet, including the first two lines, of the receiving copy, is perforated.

The back of this section of the original copy is coated with glue like regular gummed labels. As the forms are removed from the receiving machine, this perforated corner is torn off and used as an identification tab for the file folder in which we then accumulate all papers concerning a particular shipment. This simple gimmick saved the full-time service of one office employee who did nothing but type labels to be affixed to the file folders under our older system.

You will note that the receiving form (Fig. 2) is 11½ in. long, whereas the form on which the original information was typed (Fig. 1), and from which the tape was perforated, is only 4 in. long. This 11½-in. form was designed for the use of our revenue-distribution section of the accounting department to include not only the basic material now shown, but a long list of specialized data covering packing, unpacking, loading, unloading, storage, waiting time, collections, commissions, etc. All of this additional information will be added to the form at later stages of transportation and upon completion of delivery of the shipment, without having to retype the basic information which was given at the time the order was first registered by the regional office.

The important trick, developed with the cooperation of Western Union, is a key on our sending equipment which enables the typist, after she has typed her 4-in. form, to punch line-spacing characters into the sending tape. The line-spacing symbols automatically move the 11½-in. receiving form 7½ in. to the first writing line on the next form.

Savings Prove Advantages

JUST to give an example of savings made possible through the use of the continuous perforated forms over the old-fashioned method of merely

(TURN TO PAGE 112, PLEASE)



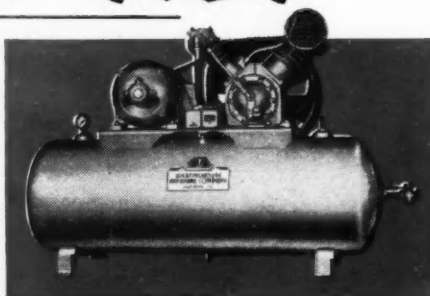
OUT OF YOUR AIR SUPPLY 3-WAYS

WITH A
WESTINGHOUSE "Y"
TWO STAGE COMPRESSOR

1. LOW OIL LEVEL PROTECTION
2. THERMAL OVERLOAD PROTECTION
3. STARTING UNLOADER . . .

Interlocked with Controlled Pressure Lubrication

In addition, the "Y" also offers all the usual modern features . . . two stage compression . . . air cooled design . . . pressure lubrication . . . automatic pressure control. It's available with displacements from 6.2 to 68 cfm. Motor capacities from 1½ to 15 hp.



ACCESSORIES FOR THE WORK

PRESSURE REDUCING VALVES

Durable, dependable . . . supplied in varying capacities and for pressures ranging from 5 to 250 lbs.



WATER-COOLED AFTERCOOLERS

Remove moisture . . . deliver dry air to machines. The Westinghouse Type "W" Aftercooler is furnished in a full range of sizes.



"SAVAIR"® COCKS

Two-way, three-way, and four-way, key type cocks. Available in sizes ranging from ¼" to 2".



INDUSTRIAL
PRODUCTS
DIVISION

WESTINGHOUSE
AIR BRAKE COMPANY
WILMERTON, PENNA.



Factory Branch: EMERYVILLE, CALIF. Distributors throughout the United States . . . Consult your Classified Directory. Distributed in Canada by: Canadian Westinghouse Co., Ltd., Hamilton, Ontario.



Tough

on oil-pumping

GENTLE

on cylinder walls

Gentle because Steel-Vent's two wall-contacting steel sections have rounded edges which provide hairline contact and reduce drag to a minimum.

Gentle because the Steel-Vent spacer has extra wide vents that let oil flow through freely for extra cylinder wall lubrication.

Gentle because Steel-Vent's flexible, low-tension inner spring works only against the steel sections—holds them on cylinder wall with soft pressure. Result: maximum life, minimum wear.

HASTINGS MANUFACTURING CO., HASTINGS, MICH., HASTINGS LTD. TORONTO

Piston Rings, Spark Plugs, Oil Filters, Casite, Drout

TOUGH but oh so **GENTLE**

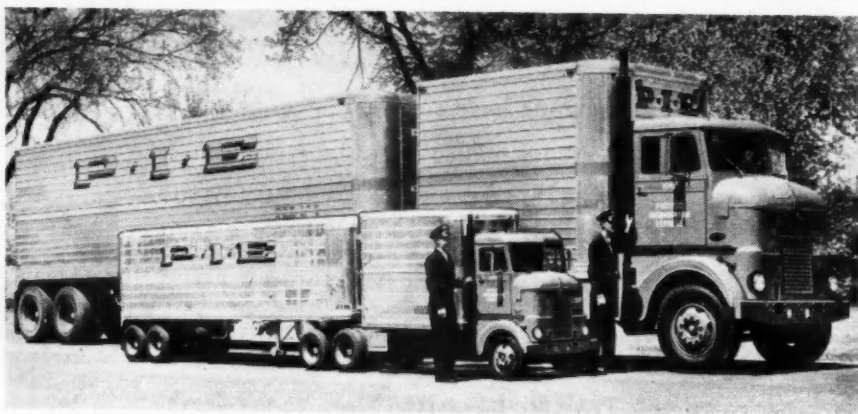


HASTINGS

**STEEL-VENT
PISTON RINGS**

RIGHT FOR RE-BORE, RE-RING, RE-SLEEVE





Big and Little Safety

The "Mighty Mite" spearheads the Highway Safety Educational Unit sponsored by Pacific Intermountain Express. As a public service, the unit is appearing in schools and areas along the P-I-E transcontinental route from California to Illinois and Missouri. Unit purpose is to promote highway safety and create interest in safe driving, primarily with teen age drivers. The midget carries and demonstrates a complete set of professional driver testing equipment and displays pictures of trucking industry safety precautions and practices which can be employed advantageously by private vehicle operators.

Forms Cut Costs

Continued from Page 110

sending conventional messages, we have found that savings in typing time alone have eliminated the need of four full-time typists in our headquarters office. Actually the saving represents considerably more than that since our volume per month in 1947 was approximately \$250,000 while today it is \$850,000. We are handling all this increased volume with many less people than we had in 1947.

As for the advantages of the leased-wire arrangement itself, they are most obvious. While we still send and receive a large volume of mail every day, there is little doubt that our savings in postage alone offset the greater portion of the entire cost of our extensive leased-wire facilities. In addition we have the great advantage of simultaneous knowledge of movements throughout our entire operations between all points in the United States and Canada, whereas it formerly took several days for the information to funnel into headquarters after which it had to be completely processed and required action taken.

Now action is a matter of hours after the original data is received. To accomplish this, we have set up a centralized dispatching-control system virtually adjacent to the communications center, with a special rack for visible handling of our particular forms. These show the order request on one side and the vehicles available for assignment on the other side so arranged that skilled dispatchers can reach a decision with great speed and accuracy.

That, however, is another story and I repeat what I said at the beginning, that each type of operation must develop its own particular forms and handling procedures.

END

Please Resume Reading Page 66

COMMERCIAL CAR JOURNAL, August, 1952



*For the kind of
hose assemblies
you want...*

RESISTOFLEX Hose and Reusable Couplings

You always have the right fuel or oil line when you have on hand a coil of Resistoflex gas-oil hose and Resistoflex sturdy, 2-piece reusable couplings with safety seal. No waste, no trouble. Simply cut to length; assemble with only two end wrenches. And there you have a hose assembly widely known for dependability — the famous low pressure hose with the liner that's immune to gas, grease, diesel fuel and lube oil.

LINEMAKER KITS!

They contain coil of famous Resistoflex Gas-oil hose plus reusable couplings and adapters for every installation except hydraulic hose.



RESISTOFLEX
CORPORATION
Belleville 9, N. J.



"T5X does all that is claimed for it ...and more!"

says California fleet owner.



Rolland Taber of Visalia, Calif., writes: "We operate 33 Cummins-powered highway tractors, 2 Hall-Scotts using butane, and one White gasoline truck. The average for the highway equipment is 90,000 miles per year per vehicle. In our desire to keep our costs to a minimum, we have instituted a preventive maintenance program and this, coupled with the use of T5X motor oil, has shown marvelous results. Our maintenance records disclose an amazing lack of wear and parts replacement. The motors are clean; the condition of the moving parts is evidence that T5X does all that is claimed for it... and more!"



1. Fleet owners everywhere depend on T5X because it's the heavy-duty oil that's specially designed to do an outstanding job under *any* operating condition, no matter how severe. The finest base stocks, plus special-purpose compounds, make T5X one of America's truly outstanding lubricants.



2. T5X cleans your engine as it lubricates, keeps the rings free, retards the formation of harmful carbon and sludge. The stability of heavy-duty T5X gives you the opportunity for increased engine efficiency... less wear... lower maintenance and repair costs.



3. Prove the unusually high quality of T5X by giving this famous *purple** heavy-duty oil a trial in engines operating under *critical* conditions. You will understand why fleet owners such as Rolland Taber say: "T5X does all that is claimed for it... and more!"



UNION OIL COMPANY

OF CALIFORNIA

*Highly effective organic compounds give T5X its distinctive purple color.

COMMERCIAL CAR JOURNAL, August, 1952

Can We Afford Model T Roads?

Continued from Page 51

non-stop highway connecting the business districts of Los Angeles and Pasadena. They found that the test car traveled only 8.7 miles for each gallon gasoline on congested streets as compared to 20.75 miles per gallon of gasoline used on the freeway. Expressing this in the form of mileage costs, driving on an overcrowded roadway

will cost the private car owner 5.6 cents per mile in vehicle operating costs but only 3.3 cents per mile on a modern congestion-free highway. For the average heavy truck (average empty weight of 10,100 lb), and assuming that the increase in gasoline consumption would be the same percentage-wise as found in the Auto Club

test, operating costs are estimated at 13.3 cents per mile on a crowded street as compared to only 7.7 cents on a freeway.¹

The saving in motor truck operating cost on a modern highway as compared to a model T road was aptly illustrated by the Highway Research Board's test runs on the Pennsylvania Turnpike and the parallel route, U.S. 30 and 11 in 1948. Three 1948-model trucks, each of approximately 50,000 lb gross weight, made three round trips over both routes and a careful check of the gasoline consumption showed 54 per cent more fuel used on the old road. The rates were 4.3 miles per gallon and 2.8 miles per gallon. One such truck making a daily round-trip over the modern highway would save better than 37 gallons of gasoline per day, representing an \$8.23 daily saving. Add to this other economies in oil, maintenance, overhead and labor and the direct benefit of the modern highway becomes even more apparent.

Of the three and a third million miles of roads in the United States, only 14,000 miles, or one-half of one per cent, are four lanes or more in width. But many of these are inadequate for today's traffic. Truly modern expressways comprise only about 2000 miles in all. If a twentieth-century Diogenes started out in search of a good road today, he'd take his lantern on a 1500-mile ride for every mile of modern highway he'd find. He might consider this a rather discouraging experiment, but then again he might consider the reward of finding an up-to-date road worth the search.

Take the Gulf Freeway leading into Houston, Texas, for instance, one of our few modern highways. When the freeway was opened three years ago, 28,800 motorists eagerly tried it out the first day. Highway planners underestimated the amazing popularity it was destined to gain and its power to "generate traffic." A year later daily volume had risen to 54,000 and today it is running at 70,000 vehicles. So the engineers began to get curious as to why the freeway attained such unexpected popularity. The answer was out when detailed tests disclosed that freeway users were saving nearly \$3-million in operating costs over what expenses had been on the old route. Tom Willier, City Traffic Engineer, undertook some advance planning for this study by making speed-and-delay runs before the freeway was opened. Comparing these with later studies on the free-

(TURN TO PAGE 116, PLEASE)

(1) See Lawton, L., "Evaluating Highway Improvements on Mileage-And-Time-Cost Basis," Traffic Quarterly, January 1950.



ARE DRIVERS "RAILROADING" YOUR VEHICLES?

Handy Governors Will Stop It

Any driver is likely to be less than meticulous in his care of a vehicle he doesn't own. Many feel no compunction about "railroading" your vehicles. Drivers do most of their work away from supervision . . . abuses are hard to correct.

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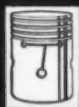
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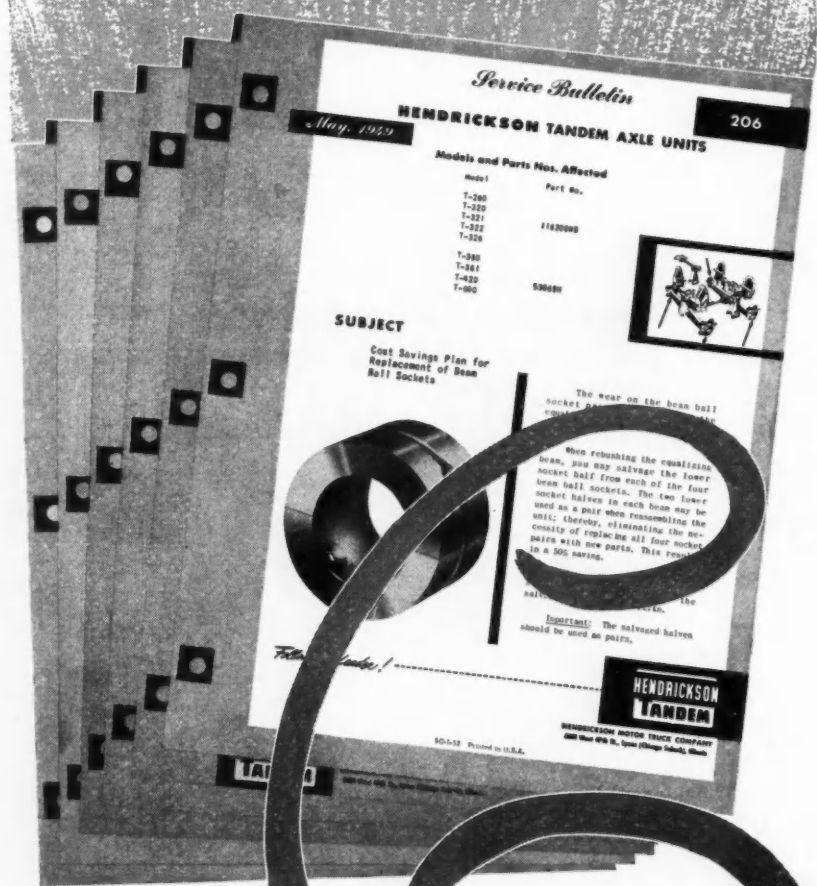
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Model T Roads

Continued from Page 114

way, a total annual time savings of 106 million vehicle minutes was found. Using a value of 2 cents for a passenger car minute and 5 cents for a commercial vehicle minute, the annual savings to users in operating costs was found to approximate \$2.7-million. Today, with greater traffic volume, the saving is greater. This one benefit is enough to pay off the entire cost of building the freeway long before it's worn out, even without taking into account other benefits such as reduced accident hazard and increased property values.

Lower Accident Rate

THE accident rate of 1.9 deaths per 100-million vehicle miles is only one-fourth that of the national average of 7.6. With few exceptions, modern highways have been found to produce about this same ratio when compared with the nation's model T network.

Rewards to vehicle owners weren't the only thing discovered. Some of the land in the vicinity of the freeway which sold for 6 to 8 cents per square foot in 1945 has now shot up to 60 and 75 cents. In general, records reveal that most of the adjacent property has increased from 200 per cent to 300 per cent in value. This increase has not been the result of mushrooming roadside enterprises such as have grown up alongside highways in the past to choke off traffic flow.

The Gulf Freeway is a limited access roadway, which means that it is fenced off from the surrounding area, and no traffic enters or leaves except at about half-mile intervals. Here the movement is a blending of traffic streams with no interruption to the through traffic. Cross traffic goes under the freeway. The major developments in the area served have been for industrial and manufacturing purposes and increased land values reflect the benefits of the new facility in providing a more rapid and safe movement of persons and goods.

Studies at Washington, D. C.'s famed Brookings Institution have shown that of the average transportation dollar spent by the motor vehicle owner, only 5 to 10 cents goes for the construction and maintenance of highways, while 90 to 95 cents represents the cost of gasoline, oil, tires, depreciation, overhead and other costs of owning and operating the vehicle. Highway economists point out that a substantial increase in the 5 to 10 cent highway cost

(TURN TO PAGE 119, PLEASE)

Model T Roads

Continued from Page 116

component, even to double this amount, would be outweighed by the potential savings in the 90 to 95 cent portion of the vehicle owner's dollar. An illustration of this economic fact can be made as follows. Total expenses of car owners in connection with transportation last year of America's 43 million passenger cars approximated:

\$24-billion automobile cost
\$ 2-billion road cost

\$26-billion total

Road cost covers license and fuel taxes and tolls, representing payment for the upkeep and improvement of our roads. Automobile cost includes all other expenses such as fuel, insurance, depreciation, etc. (Commercial vehicles pay another billion dollars, making approximately 3 billion in total user taxes going into highway construction and upkeep.)

It is generally acknowledged that an extra billion dollars per year spent on our highways would bring them up to par. An increase of 2½ cents in state gasoline taxes would produce the needed billion. Since the truckers of the nation pay a third of our road costs, the added road cost to automobile owners would be two-thirds of a billion, making their total road cost equal \$2½-billion annually (rounded off to \$2.7-billion below). Assuming a reduction in the automobile cost factor

of as little as 10 per cent, the total expenses for the 43 million car owners would be \$24.3-billion, a reduction of \$1.7 billion from the \$26-billion expense at present.

\$21.6-billion automobile cost
\$ 2.7-billion road cost

\$24.3-billion total

Thus an increase of 50 per cent in state gas taxes would actually produce a reduction of 7 per cent in the total cost of owning and operating an automobile, and no account here is taken

of other benefits to commerce and industry. (The only assumption made in this example is the 10 per cent saving in vehicle ownership and operating costs, a prudent assumption in the author's estimation judging from the many examples of reduced operating costs afforded by modern roads.) It is reasonable to assume that the relative reduction in the vehicle cost component of commercial vehicles would be even more substantial than that shown for private automobiles. (No estimates are available for total ownership and oper-

(TURN TO NEXT PAGE, PLEASE)

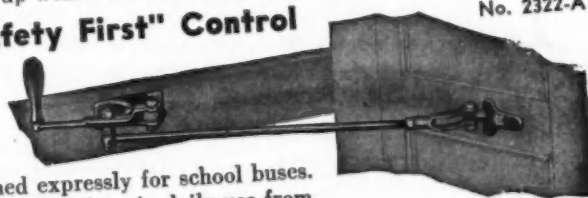
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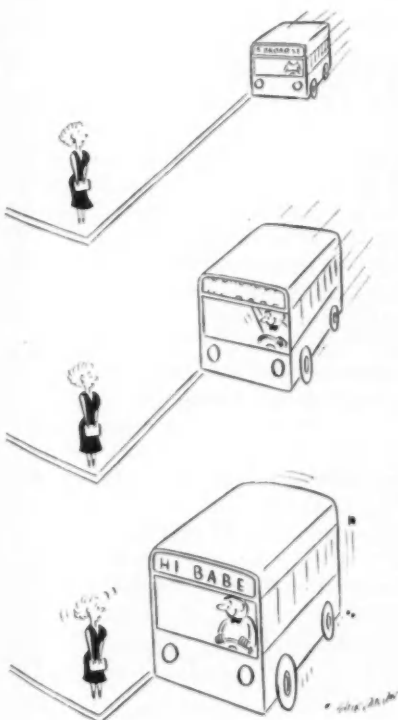
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Model T Roads

Continued from page 119

ating costs of the nation's 9 million trucks. Hence a comparison as shown for automobiles is not included here.)

Every indication points to the fact that the economic truth pointed out in this example is being more widely accepted and understood. It is safe to say that more of the future highway dollar will go into highway improve-

ment and less and less down the drain of vehicle operating costs.

Out of the Muddle

THE American driver, befuddled and harassed by the constant tangle of today's traffic, can look forward to a better day coming, to a new era in motor car transportation that will make today's model T roads as obsolete as the kerosene headlamp. Local and regional groups in all parts of the country are taking up the cry to "get us out of traffic muddle." This nation

is experiencing a development exactly parallel to the powerful and far reaching "good roads movement" that was begun by ten million bicyclists at the turn of the century, taken up in turn by the small but vocal group of pioneer automobilists, and finally brought to fruition in the great roadbuilding programs of the 1920's and 30's. The cry, "get us out of the mud," was no less fervent than today's plea for deliverance from the traffic muddle.

The revived good roads movement is spreading. One approach is the toll road. More and more state legislatures, despairing of ever getting needed highways under conventional financing methods, are realizing that millions of motorists can and will pay to use a modern road when they see it. The car owner driving over the New Jersey Turnpike, for example, pays 1½ cents per mile in tolls, the equivalent of an added 22½ cent per gallon gasoline tax. And there seems to be little reluctance to paying this charge where the driver can see what he's getting for his money. The Pennsylvania Turnpike, the New Jersey Turnpike, Connecticut's Merritt Parkway, the New Hampshire Turnpike and the Maine Turnpike are among this group of modern toll roads and soon Oklahoma, Colorado and New York will have such modern pay-as-you enter superhighways.

Still more important is the movement for more adequate public roads. Highway engineering and financial studies are being made by all levels of government on a scale never before equalled, even to the extent of building special test roads to be used exclusively for measuring wear and tear under different kinds of traffic. Vehicle and rubber manufacturers and other automotive industries have thrown their weight into the new good roads movement. State and local highway improvement associations and chambers of commerce are adding to the mounting pressure for good roads. How sincere these local groups are is well represented by examples such as the Oklahoma City Chamber of Commerce, which took matters into its own hands and contracted to buy up a million dollars worth of land for a modern road network in their city.

From all highway user groups comes increasing support for PAR, the growing national movement for better roads known as Project Adequate Roads. The Chamber of Commerce of the U. S. is a charter member of this project and is preparing to support it to the fullest extent. (Editor's Note: See CCJ, Dec., 1951, page 64.)

END

Please Resume Reading Page 52

COMMERCIAL CAR JOURNAL, August, 1952



The Servis Recorder Shows Up All Idle Time...

- when your trucks got started in the morning.
- when they were working, during the day.
- when they were standing.
- how long they were idle—and why.
- and that Overtime—was it necessary?

Look at the Servis Recorder chart above—note those spaces or "gaps" in the travel line marked with arrows. Each one of those gaps indicates idle time—the truck wasn't running then. Were these delays justified, unavoidable?—or, was someone to blame? You want to **KNOW** whether your trucks are losing valuable time now and then on their routes during the day—how much and how often.



The only accurate way to keep tab on all those delays, even down to 10-minute periods, is to attach a little **SERVIS RECORDER**; the truck automatically *acts as its own Time-Keeper!* Write for full information. The Service Recorder Co., 1375 Euclid Avenue, Cleveland 15, Ohio.

The Servis Recorder

Shows Busy and Idle Time ... All Day

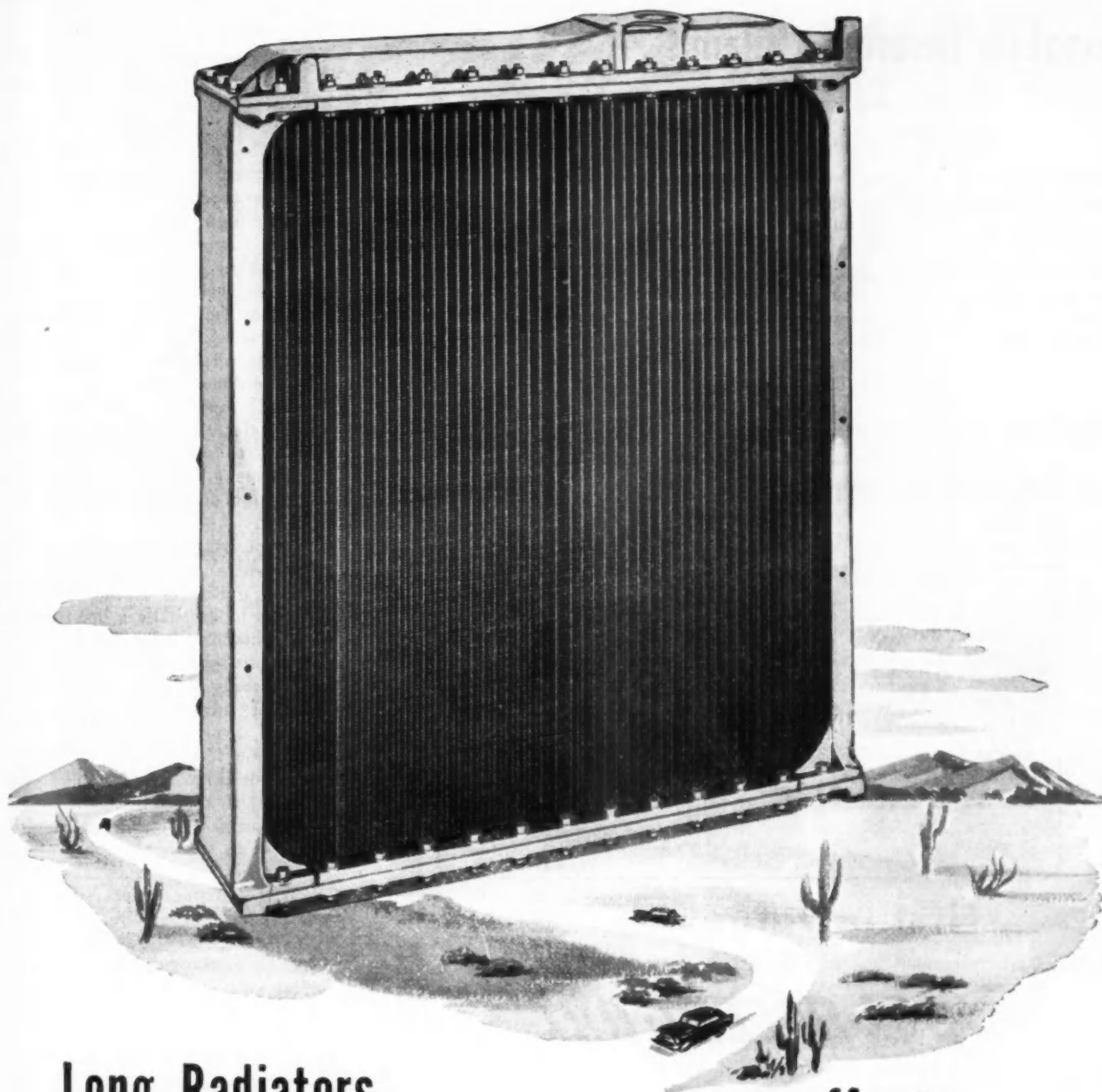
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Bungling Insurance Claims

Continued from Page 69

Since equipment or cargo may be completely destroyed in the case of fire, extreme care should be taken in detailing all equipment on the truck, such as refrigeration units, pads, canvass, tools, spare parts, fire extinguishers, etc., and the exact nature and quantity of the cargo. Otherwise, your in-

surance may fail to fully cover your loss—simply because certain items were not included in your proof of loss. Trade names of spare parts lost should be stated, for example, because different brands of the same tool often vary considerably in price. Your insurance adjuster must always demand facts.

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CCJ-8-52

Respect Those Forms

IN many cases, identical forms are furnished theft and fire loss claimants, because information required for both types of loss is parallel to a great extent. Usually, certain questions are included on the forms pertaining to fire loss together with other queries covering theft loss.

These latter questions, averaging about 15 in number, will include requests for these facts: (a) whether the truck was locked; (b) when the theft was reported to police; (c) identifying dents, scratches and similar marks; (d) speedometer reading (when last checked) and (e) the approximate date of the vehicle's last paint job, in addition to such obvious data as the truck's make, model, color, license and motor number, serial number and type of body.

A type of form peculiar chiefly to truck-owners and common carrier truck lines in particular is the sworn proof of cargo loss, usually a one-page document containing questions on both sides and requiring notarization if the cargo loss exceeds \$25.00. In addition to pertinent information concerning the vehicles involved, it will be wise to have these facts on tap when making claims for cargo losses: (a) the actual operator of the equipment when the loss occurred (you may have rented or leased it to another party); (b) any other insurance policies affecting the cargo; (c) driver's name; (d) how the loss occurred or apparently occurred; (e) whether the trailer or semi was detached at the time of the loss; (f) the cargo's owner; (g) the point of origin of the cargo; (h) its destination; (i) the disposal of the damaged cargo and (j) a complete, itemized statement of the cargo or cargoes involved. Here, again, lack of complete information may mean squandered insurance benefits.

Insurance claims forms are generally designed to obtain the most possible information with the fewest possible questions. No question asked is unessential to the insurance company in handling your claim. It, therefore, is imperative that no blank lines be left unfilled. To expedite your claims, take extreme care to avoid ambiguity, misrepresentation and deceptive statements. Here is an example of the latter: Question: (For an accident damage claim) Location of accident? Answer: Just off Highway 99. We will say, for example, that the claimant means here that the collision occurred on the shoulder of Highway 99, where his truck was halted when struck. But this statement might appear to mean a private driveway or auxiliary road in-

(TURN TO PAGE 126, PLEASE)

IS THE CHIEF CAUSE OF SLUDGE!

Exclusive Walker Patented Laminar Construction not only protects oil from road dirt, metal and other abrasives but provides *Extra Protection* against sludge formation, too!

● Among men who know lubrication, water from "combustion blow-by" is considered the most objectionable of all crankcase oil contaminants—because water in the oil is the *chief cause of sludge*. Water contamination in the presence of soots, lead compounds and other solids can cause pasty emulsions which are the starting point of sludge deposits. Any water in the oil is detrimental. It tends to increase oxidation and breakdown—but whenever appreciable water contamination develops, sludge is almost sure to follow.

Because of its exclusive patented Laminar construction, a Walker Oil Filter functions in two ways to

help prevent sludge formation. First, by removing the solids through "3-way filtration" it keeps their accumulation from exceeding the "holding capacity" of the oil. Second, because of the unusual ability of the particular wood cellulose fibres used, the Walker Oil Filter will *selectively* remove water from the oil, and, therefore, assists in keeping the moisture content of the oil below the "sludge danger zone."

Walker Oil Filters recognize and act against the "triple threat of water"—the greatest enemy of motor oil and good lubrication. They provide an *extra preventive protection* against sludge forma-

tion. They minimize corrosive acid wear by absorbing the acids contained in the water removed from the oil . . . and they help preserve the detergent-dispersant action of modern heavy duty oils by removing water which can cause precipitation.

Here is a new concept of what an oil filter can and should do—*protection from all dangerous oil contaminants—including water*. Give your engines the benefit of this *extra preventive service* made possible by the exclusive Walker Patented Laminar Construction.



WALKER

OIL FILTERS

WITH PATENTED *Laminar* CONSTRUCTION



Insurance Claims

Continued from Page 122

tersecting Highway 99. Hence the need for care in answering questions. The correct reply here should be: "On the left (or right) shoulder of Highway 99, about — yards from the pavement." Such a response leaves nothing to speculation.

Again, in answering the question "How many miles from point of shipment to point of accident (in a sworn

proof of cargo loss) the claimant may be prone to state the mileage from the beginning of the truck's run rather than from where the cargo was picked up. In many cases, cargoes are picked up at several different points by the same truck, and the cargo on which a loss has occurred may be the last to be loaded (especially if the truck in question was involved in a rear-end collision). Hence the mileage from the vehicle's starting point may differ from that to the pick up point by many miles.

Some questions may prove difficult to

answer explicitly. For instance: "What was done to protect salvage and cargo from further loss after the accident occurred?" (A question found on some proof of loss forms). In this case the claimant should, if the cargo was moved, tell not only where it was moved, but also by what type of conveyance, and how soon after the accident or fire. The weather conditions at the time of the removal might also be mentioned, and a description of the type of domicile to which the cargo was moved, whether it was weatherproof, under lock and key, etc.

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	Style	Capacity cu. ft.	Height in.	Diam. in.	Weight	
					Full lb.	Empty lb.
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Acetylene	WQ	60	24 3/4	7 3/4	55	51

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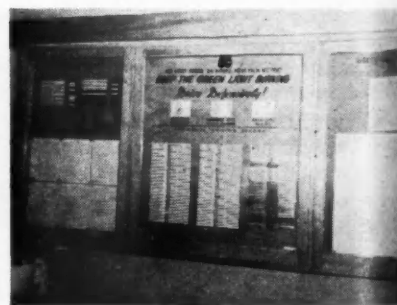
Everyone who works with metals should have an oxy-acetylene welding and cutting outfit. A jobber near you can supply your needs promptly. Write us for his name and address. Linde Air Products Company, a Division of Union Carbide and Carbon Corporation, 30 East 42nd Street, New York 17, New York.

Enlist Driver's Help

NOT infrequently your driver will state that he does not remember the time of the accident, either because he does not carry a watch or because he failed to check it after the collision. Since the time element is required to be as accurate as possible on most insurance claims, every possible effort should be made to fix the approximate time of the accident. Often one of the following schemes will prove effective: Ascertain the distance between the point of trouble and the town through which your truck last passed. Then get the driver's estimate of his average speed between that town and the point where his vehicle was halted. Someone in the town may recall seeing your truck go through and be able to roughly guess the time. This information, coupled with the elapsed time required to run the truck between the town and its stopping place (figured by the mileage and speed estimate) will give a fair estimate of the desired

(TURN TO PAGE 128, PLEASE)

Green Light for Safety



Placed in the drivers' room of the W. Arthur & Co., Inc., Jamesville, Wisc., this board provides a safety reminder. A green light indicates an accident-free driving day while a red one indicates that the record has been broken. The drivers' names are listed on the board to show who has the longest safe driving record. The object, simple as it may seem, is to keep the green light burning. Considerable interest has been shown by the drivers in keeping a good record.

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EXCLUSIVE 
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PLANTS: Kelsey-Hayes Plants in Michigan (4); McKeesport, Pa.; Los Angeles, Calif.; Davenport, Iowa; Windsor, Ontario, Canada.

Insurance Claims

Continued from Page 126

time. Determine the place where the driver last stopped to eat. Drivers frequently recall the approximate time they pull in for a meal. Check the mileage between this establishment and the point of trouble.

Too often, according to one insurance company, drivers report "no witnesses." There are always witnesses, this firm states. Possibly the "wit-

nesses" failed to actually see the wreck, but they may have arrived later and can testify regarding the position of the vehicles, skid marks, etc. In the absence of eye witnesses, their testimony can be extremely vital to your case.

Sometimes, not all of the questions will be asked on the claims forms. Often situations arise which are not covered by regular forms, and investigation must be handled either by personal letter or through an insurance company representative. Take the matter of other insurance. The company

with which you file claim will wish to know this promptly, because it may develop that the insurance in question will be covered in an omnibus coverage of some other policy, possibly relieving the company you have contacted of any liability. In some cases a situation will arise that would provide for co-insurance on the loss in question. If a leasing or sub-hauling arrangement is involved, your insurer will also need to know. It likewise is important whether the truck was operating under ICC or PUC filings or solely on a bill of lading.

It is important that your driver obtain as much information as possible at the time of an accident. Frequently, some of the facts he obtains cannot be uncovered at a later date. The names and addresses of all persons occupying each vehicle involved should be ascertained, together with the names and addresses of all witnesses, including the first persons to arrive on the scene, even if they are children. Minors' testimony has, on occasion, been admitted to court records. If witnesses refuse to disclose their names and addresses, the license number of their auto should be obtained if they drove to the scene.

Other pertinent information which your driver should be required to assemble immediately includes the names and addresses of the registered and legal owners of other vehicles involved, the names and addresses of the other drivers, the names and addresses of injured parties and the approximate lengths of skid marks made by each vehicle involved, together with each vehicle's position with relation to one another immediately following the collision.

Make your drivers insurance conscious as well as safety conscious. Insurance is one of your greatest assets. Don't waste it!

END

Please Resume Reading Page 70



"For the tenth time today, there is NOBODY here by that name!"

COMMERCIAL CAR JOURNAL, August, 1952

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By also using the Model A Tachograph, we are able to maintain better schedules and still have a complete record of each trip. Hence, our drivers not only have a log of each trip, but the company has valuable information for helping to improve our service to customers.

Very truly yours,

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Superintendent of Maintenance



Members of AMERICAN TRUCKING ASSOCIATION
WASHINGTON MOTOR TRANSPORT ASSN., INC. • OREGON MOTOR TRUCK ASSN. • THE MOTOR TRUCK ASSN. OF SOUTHERN CALIFORNIA

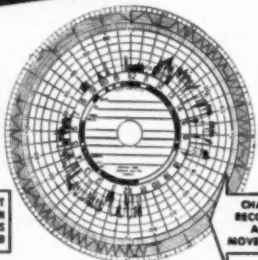
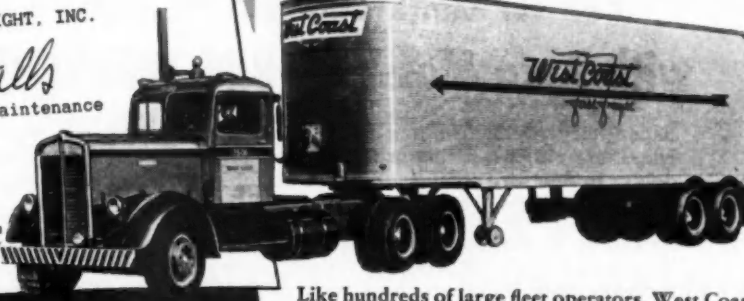


CHART TELLS ALL

- WHEN ENGINE STARTED
- HOW LONG ENGINE IDLED
- WHEN VEHICLE WAS IN MOTION
- HOW FAST IT TRAVELED
- WHEN VEHICLE STOPPED
- DISTANCE TRAVELED BETWEEN STOPS

Like hundreds of large fleet operators, West Coast Fast Freight, Inc., has equipped all of their over-the-road units with Tachographs. They are easily installed on the dash of the vehicle and connected to the speedometer cable. A wax-coated chart is inserted at the start of each run and automatically operated styluses make a permanent record of all movements of the vehicle, as listed at left.

If you are interested in real over-the-road economy, investigate Tachographs—They will help you keep your vehicles out of the repair shop... cut down accidents... and help you earn lower insurance rates. Mail coupon below for full information.

Wagner Electric Corporation

6476 PLYMOUTH AVE., ST. LOUIS 14, MO.

Please send a copy of Bulletin SU-3B.

Name and Position _____

Company _____

Address _____

City _____ State _____

We operate _____ Vehicles
(NUMBER)

DISTRIBUTED BY
Wagner
Electric Corporation

552-2

COMMERCIAL CAR JOURNAL, August, 1952

help us maintain better
schedules and give
us a complete record
of each trip"

Says: Jerry Thralls
WEST COAST FAST FREIGHT, INC.



Sliding Fifth Wheel Adjusts Length

Continued from Page 55

have to do is unlock the pin, accelerate the truck and it moves away from the trailer.

We are having these sliding fifth wheel assemblies installed in our trucks for an approximate cost of \$175. There is a 200-lb weight increase with the assembly installed.

The forward position of the sliding fifth wheel plate carries the king pin (on trailer) to a location 45 in. from the back of the cab, which allows enough articulation between the trailer and truck to make all road turns.

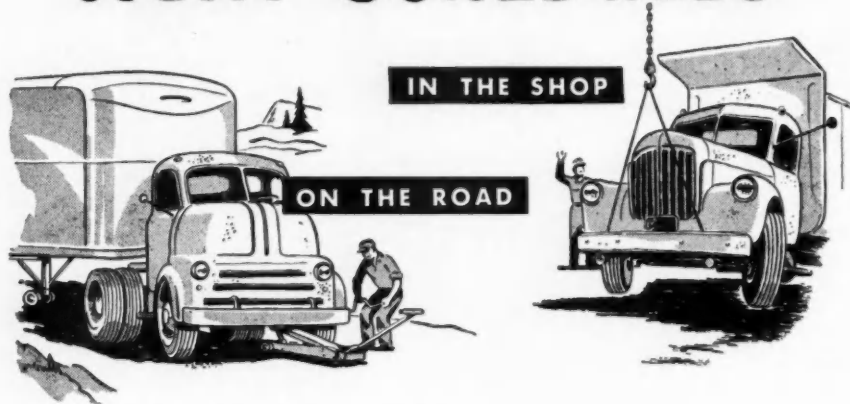
When this short coupling just described is used, a standard 35-ft trailer

will not cause an overall combination length of 45 ft to be exceeded.

For maneuvering around the docks, the trailer can be coupled out 19 in. longer by use of the air valve. This furnishes ample maneuverability and at the same time eliminates any interference between the rear wheels of the tractor and the trailer dollies.

With this installation, when one of our operators leaves New Mexico (where they allow a long overall length) and enters Texas, the operator short couples his vehicle while in motion by merely touching a valve which permits the trailer to push the fifth wheel into short couple position, thus meeting the full requirement of the Texas 45-ft length law.

TIGHT SCHEDULES



Call for Quick Changes with Apco Mossberg RIM WRENCHES

Emergency repair kits and shop tool cribs equipped with Apco Mossberg rim wrenches are your best protection against costly delays in fleet tire changes. There's no time lost locating the right wrench... no need for inadequate substitutes.

Available in three popular styles—(1) Two-Piece (2) Four-Way (3) Brace—Apco rim wrenches are steel forged and perfectly balanced to assure maximum overall strength. Extra deep sockets provide a safe, sure grip... longer handles add greater leverage, allow sufficient clearance to work on wire wheels and deep hubs with ease.

Don't let time-consuming tire changes hamper your road or shop schedules. Equip your fleet with Apco Mossberg truck wrenches and service tools. Ask your jobber or write direct for catalog and prices on our complete line.



APCO MOSSBERG CO.

187 LAMB STREET, ATTLEBORO, MASS.

Reducing Truck Length

AFTER removing the front bumper and radiator shell, we measured 6 1/8 in. from the end of the frame and cut straight across the radiator support. This left two bolts flush with the end of the frame still holding the radiator support. We then cut a piece of oak to fit snugly in the radiator support, and welded 5/16-in. metal stock to box in this piece of oak solidly. We then placed a straight edge across the radiator support and cut the bumper brackets even with the radiator support. Next we took a 7-in. channel and bolted through the radiator support and bumper brackets.

We removed the shutter control cylinder and cut the bracket which holds this cylinder, rewelding it higher and closer to the top of the radiator.

We straightened the linkage to the shutters to line up with the cylinder, which we then replaced to the new position. We cut the radiator shell horizontally where the factory crest is stamped. We removed the section to the work bench and hammered it out flat. It was then replaced and trimmed where needed. It was welded up and leaded in, shell replaced and painted.

The grille was made from 3-in. channel cut and bevelled to look similar to the standard grille. The top bar across the grille is 1 1/4-in. by 1/4-in. angle, slightly curved to clear the shutters. The three center bars are "L Line" International truck grille bars. We welded a small angle on the channel to support these bars. In bolting this grille into the frame we used the same method used by the factory.

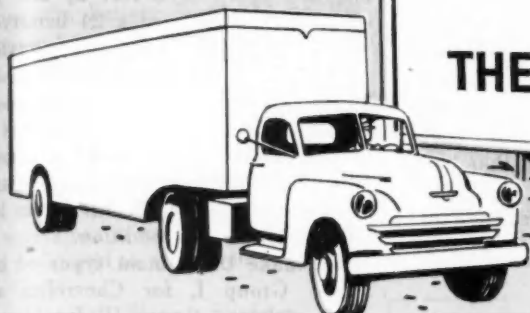
With the above correction we remove 5 5/8 in. from the front of the truck, reducing the distance from the bumper to the back of the cab (BC measurements) to 111 3/8 in.

END

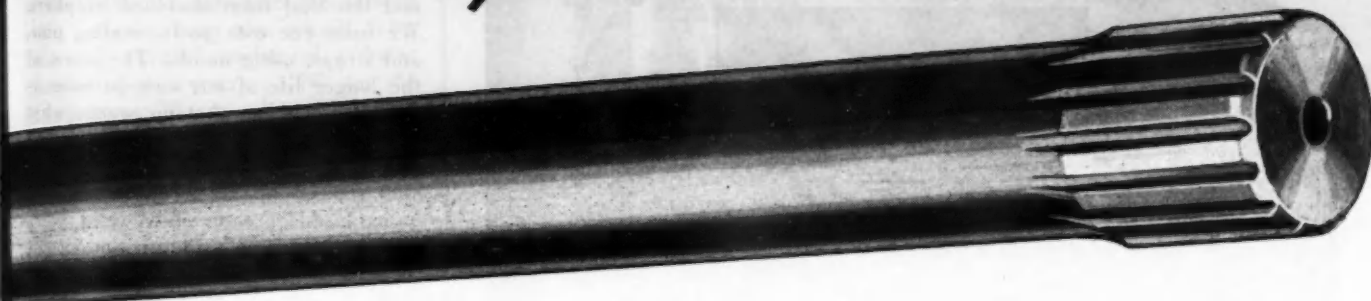
Please Resume Reading Page 56

COMMERCIAL CAR JOURNAL, August, 1952

THE MOST AMAZING OFFER
EVER MADE IN
THE TRUCKING INDUSTRY!



for 100,000 MILES!



**EFFECTIVE,
AUGUST 1, 1952,** *Free Replacement*

**OF ANY TIMKEN-DETROIT TORSION-FLOW AXLE SHAFT
THAT FAILS WITHIN 100,000 MILES OF OPERATION!**

Once again Timken-Detroit *proves* its engineering and manufacturing leadership—its product superiority. All Timken-Detroit Torsion-Flow Axle Shafts purchased or installed on or after August 1, 1952 are *guaranteed* for 100,000 miles, or for 3 years! If at any time during the first 100,000 miles of operation or for 3 years, whichever occurs first, your Timken-Detroit Torsion-Flow Axle Shaft fails, it will be replaced absolutely free of charge, under the terms of our guarantee, by any authorized truck dealer who

sells Timken-Detroit-equipped trucks.

The next time you buy trucks, take advantage of Timken-Detroit's more than 40 years of engineering and manufacturing experience. Buy only trucks equipped with dependable Timken-Detroit Axles and Brakes.

TIMKEN
Detroit
AXLES

A PRODUCT OF THE TIMKEN-DETROIT AXLE COMPANY
DETROIT 32, MICHIGAN



PLANTS AT: Detroit and Jackson, Mich. • Oshkosh, Wis. • Utica, N.Y. • Ashtabula, Kenton and Newark, Ohio • New Castle, Pa.

Shop-Built Batteries Fill the Bill

Continued from Page 72

and failures are at a very low figure.

All of our battery building is done in our new St. Catharines, Ont., garage. One man is in sole charge of the department and, apart from building a fine battery, he has learned much of value pertaining to general battery care which not only helps reduce maintenance costs but keeps trucks rolling where formerly they often stopped.

It is true that most battery manufacturers recommend the things that we practice in battery care. But possibly few fleets exist which follow these recommendations as religiously as they should, for the simple reason that battery care in many shops is a divided responsibility which minimizes the full potential of the manufacturer's recommendations.

for TIGHTER DOORS Specify HANSEN



TIGHTER, rattle-proof doors are assured when bodies are equipped with Hansen Hardware. Specimens of such hardware are illustrated and briefly described:

No. 10 Continuous Hinge. supports door its entire length. Provides greater holding power and prevents sagging or misalignment. Insures easier opening and closing. Made in 12" lengths.

No. 60 One-Piece Extension Lock. Wide striker bolt and one-piece construction hold doors solidly in place. Die-formed steel bushing keeps handle aligned—prevents wobble and play.

No. 85 Window Regulator. Straight-up lift. Keeps window free from catching or jamming. Rigid, rugged construction. Four turns of handle raise or lower window. Moving parts enclosed. Five lengths. Right or left-hand application.

No. 100 Rotary Take-up Lock. Interlocking drawing action draws two doors together as solidly as one. Wedge-shape bolts at top and bottom further tighten doors. Easy to apply.

These are just a few of the many Hansen products in a complete line—for all types of commercial bodies, tanks, trailers, etc.

REQUEST CATALOG

A.L. HANSEN MFG. CO.

5047 RAVENSWOOD AVE. CHICAGO 40 ILLINOIS



Our battery building setup is comparatively simple and inexpensive considering the good it does. The department is small, being housed in a wire-enclosed space of 8 feet by 20. The equipment consists of a 24 battery-capacity charging unit, an acetylene torch, lead, a few molds, a work bench or two, a desk and set of record books. But this combination of elements in action permits us to build a sturdy, long-lived battery as well as permitting us to exercise unusual control over battery movement and condition.

We make three main types of batteries. Group I, for Chevrolets and small pickups. Group II, for tractors and tandem tractors and Group III, for Fords, which use a reverse assembly. We also build, complete, a few 12-volt diesel batteries and we have built an 8-volt "booster" battery for yard use.

Battery Building Steps

In fabricating our batteries we buy the separators, the plates, the boxes and the lead from standard suppliers. We form our own posts, sealing nuts, and straps, using molds. The secret of the longer life of our own batteries is found in the fact that no matter what type of battery we are building we always use heavy-duty plates and heavy-duty separators. A more generous use of lead adds greater sturdiness.

In building our batteries, the correct assemblage of negative and positive plates is most essential. They must be evenly spaced and they must stand up straight. Then they must be properly connected with the melted lead. Care is taken in this operation to keep the torch flame from becoming so hot that it causes the lead to crystallize. Our more liberal use of lead gives great strength to the overall construction.

Most of our batteries are 15-plate assemblies, 8 negative and 7 positive. Consequently, and expectedly, when batteries come in for rebuilding we often find that while the positive plates need replacing, the negative plates do not—a fact which permits us to merely replace the positive plates and leave the negatives in. The resultant battery rebuilt in this manner often gives us an additional ten months of service before scrapping—and at a very reasonable cost.

The next step in building is the addition of the electrolyte and the charging. We mix our own electrolyte fresh and we are most careful to obtain the proper strength of solution which is tested with a hygrometer. After the addition of the acid we allow the battery to sit for 24 hours before charging it. This time-lapse allows the battery to become "active" . . . to grow muscles, as it were.

(TURN TO PAGE 137, PLEASE)

Shop-Built Batteries

Continued from Page 134

Then the battery is placed on the charging line and given a 40-50 hour slow charge after which it is discharged and cycled at least once before being put into service.

We have often found it necessary to make some adjustment to the acid even after charging. Before using, we keep our separators in stock in water to keep them moist and to prevent their curling.

Records Prove Savings

We keep a comprehensive set of records on both new built and rebuilt batteries because we feel that the more intimate knowledge we have of the batteries in service the more effective our battery maintenance becomes.

We keep a new battery record book; and a rebuilt battery record book. We have also coded each of our batteries to enable us to segregate the factory built batteries from the rebuilt jobs. This code simply consists of a letter stamped upon the strap. "N" for the new battery; "R" for the rebuilt battery.

When a new battery is built, we stamp the strap with the "N," give it a number (these run consecutively) and assign it to a tractor where it stays not only through its "new" life but through its "rebuilt" life as well. The permanent assignation of the one battery to the one tractor not only permits us to know at all times where the battery is but quite often furnishes us with a lead to other troubles that may be caused by faulty driving practices; other faulty electrical equipment; or both.

When the battery is installed in the tractor its number and date of installation is entered in the new battery book. Other information recorded herein tells what tractor it went into; what branch it was sent to; and then the final date it was taken out of service to be rebuilt or scrapped. If scrapped, we record the reason.

While this battery has been out of service it has been replaced with one

of our spare batteries which we identify throughout our system by painting the boxes in red. We keep such batteries on hand at all branches as spares and records of their installation in tractors is always kept. We want to know where all of our batteries are at all times and head office is furnished with a monthly report of all new and rebuilt batteries produced; the number installed in trucks; the number of "red" batteries in stock.

Our battery building program has given us a better battery at less cost. In the meantime we have learned much

about the proper care of batteries because of this program. For instance, we learned that adding dope to a battery, while in service, does not help it but is more apt to ruin it. We more fully than ever appreciate the necessity of keeping battery plates covered with water. We learned that voltage control on the truck must be properly set and must operate efficiently and that lacking this control a good battery can be ruined in as little as four months.

END

Please Resume Reading Page 73

TOUGH TUNG-SOL 12-16 VOLT TRUCK LAMPS

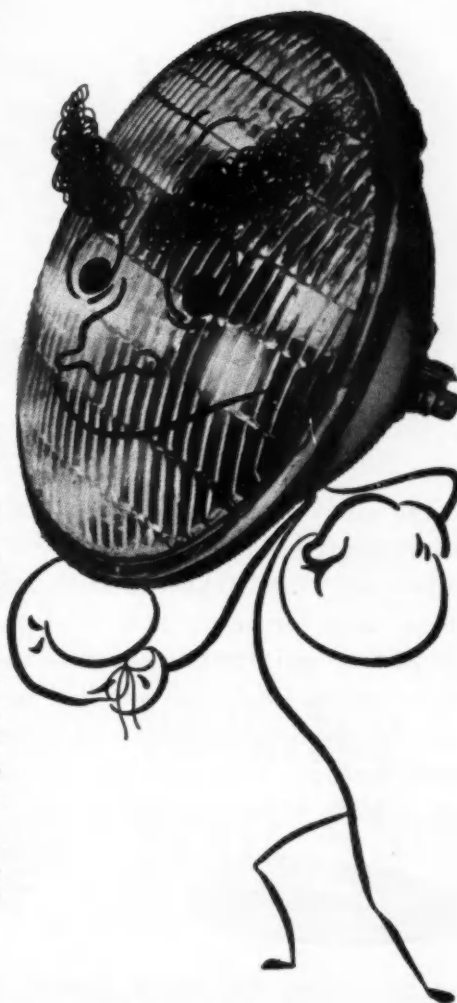
As your trucks pound over the highways and bang against loading platforms, all that jarring and jolting beats the life out of your lamps—that is, if your lamps are not built to withstand this rough service.

Tung-Sol lamp engineers made a study of truck lamp failures and wherever service difficulties showed it to be necessary they did something about it. For example, they added a center support to the filament of the 4430 all-glass sealed beam headlamp. That extra support keeps the filament from sagging and eliminates this cause of many premature burn-outs.

So, if you'd like to cut a sizeable chunk off your lamp bill, avoid a lot of replacement work and keep out of trouble on the road, your best bet is to use *tough* Tung-Sol Truck Lamps. Your wholesaler probably has them, or if you ask, we'll gladly send you the name of the Tung-Sol distributor nearest you.

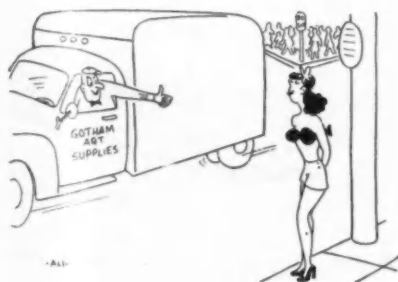
Tung-Sol Electric Inc. • Newark 4, N. J.

Sales Offices: Atlanta • Chicago • Culver City
Dallas • Denver • Detroit • Newark • Philadelphia



Built to take a Beating!

Tung-Sol makes: All-Glass Sealed Beam Lamps, Miniature Lamps, Signal Flashers, Picture Tubes, Radio, TV and Special Purpose Electron Tubes.



Shift Charts Guide Truck Selection

Continued from page 57

jecting conditions that vary with each operation. An understanding of the mechanical processes taking place within the transmission when shifting gears is useful, but is not an absolute requirement to apply shift pattern charts successfully.

Value of Shift Charts

A GREAT deal of information is available from the analysis of shift patterns. Although the primary purpose of these charts is to help in the selection of adaptable combinations, other conclusions can be drawn from

shift patterns which can be used to improve truck driving practices:

1. To compare the performance abilities of two trucks, compare the engines as they are harnessed—not by torque or horsepower curves alone.

2. To obtain maximum overall performance, engines should be operated in the upper rpm ranges near the maximum net horsepower points. This reduces lugging tendencies, permits greater fuel economy, and increases truck performance. In order to achieve this, drivers should be acquainted with shifting sequences and the use of gear-splitting techniques.

3. When shifting through the gears to arrive at top speed with full loads (up-shifting), each gear should be held until the governor is reached (or to recommend maximum engine speed when not equipped with governor). The best gear splits to be used will vary with operating conditions and can be planned from the shift charts.

4. When shifts are required on grade climbs or to overcome headwind conditions (down-shifting), a knowledge of the shift sequence will enable use of the next lower gear, keeping rpm and available horsepower up to maintain faster speeds.

5. Shift pattern charts will enable an operator to select the gear splits that are useable, rather than to rely solely on trial and error selection by the drivers.

Many operators have found it practical to transfer the gear positions and mph values obtained from a shift chart, to a speed chart which can be placed on the instrument panel of the truck. With a table in front of him, a driver can improve the truck's performance by shifting into the gear positions that correspond with each mph range. If each gear position is held within the mph range indicated by the table, the driver will automatically maintain the highest available horsepower—either while up-shifting or down-shifting. At the same time, the engine will be operating within its recommended rpm range.

(TURN TO PAGE 140, PLEASE)



Brighter Beacons for Safety—Service

● The sparkle and brilliance of the Grotelite shatterproofed plastic lens makes this jewel-like marker lamp the bright beacon for highway safety. Built for heavy duty truck service, the No. 204 is resistant to weathering — gives longer trouble-free wear with less maintenance cost. Designed for mounting on curved cab or fender surfaces, this streamlined beauty has high visibility to both front and sides.



No. 205
Economical model for roof or corner mount. Light transmitted through front section only of one-piece shatterproofed plastic lens top.

Sold by Leading Automotive Jobbers Everywhere

THE **Grote** MFG. CO., INC.
GROTE SQUARE BELLEVUE, KY.
Opposite Cincinnati



Grote's new automotive factory at Seymour, Ind., facilitates prompt deliveries of Grote's "Truk-Line" lamps and reflectors.

No. 70

Most compact, lowest priced reflector flare set.



No. 610

Clear and non-glare—rubber mounted — round or rectangular mirrors.



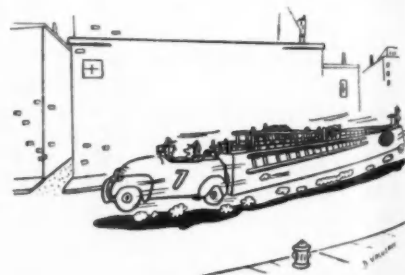
No. O-110

Rugged construction . . . brightest reflection — round or oval reflectors.



No. 200

Strongest armored clearance lamp. Fresnel type shatterproof lens.



"Watch him now when I duck into this alley!"

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ack into

ust, 1952

ACCESSORY INSTALLATION—Drilling holes in cowl, bulkhead, instrument panel for windshield washers; heater installation; holes in steering column for directional signals; spotlights, mirrors, inside visors, special switches, etc.

ENGINE REPAIRS—Glaze breaking; cleaning or enlarging oil return holes; cleaning valve guides, heads, piston tops, blocks; drilling holes for repair of cracked heads and blocks; lining up holes in core and shell brackets when replacing radiator core, etc.

BODY REPAIRS—Drilling holes in wheel housing when replacing fender; holes for attaching new body molding; holes in hanger straps and frame for mounting new muffler; bumper mounting holes in frame on repaired wreck job; drilling out broken or rusted studs and bolts, etc.

Black & Decker Drills are versatile, practical, profitable All Over Your Shop!

EVEN this brief sample of uses makes it plain why electric drills are worth their weight in gold in your shop. And remember: Black & Decker is your *best* buy in electric drills! That's because you get powerful B&D-built electric motors—full ball-bearing construction—extra-tough gears, shafts and chuck spindles—husky housings, streamlined design, perfect balance—and a choice of 25 models, 1/4" to 1 1/4" capacity in steel; choice of speed, power and price in most capacities. See your

nearby B&D Distributor for demonstrations. Write for free catalog of over 100 Electric Tools to: THE BLACK & DECKER MFG. Co., 632 Pennsylvania Ave., Towson 4, Md.

LEADING DISTRIBUTORS EVERYWHERE SELL

Black & Decker

PORTABLE ELECTRIC TOOLS

Charts Guide Selection

Continued from Page 138

The table will also enable the driver to vary his selection of gear positions for different operating requirements. With full loads for example, best acceleration can be achieved by shifting into every useable gear position throughout the up-shift. When operating with light loads, fewer shifts will be required in the lower half of the

speed range, depending, of course, on the terrain and road conditions.

Factors to Be Considered

A FEW of the general factors to be considered when selecting axle and transmission combinations can be summarized as follows:

1. Determine whether the operation is primarily a highway type or an off-highway type.
2. An off-highway type of operation requires emphasis on maximum reduction and close gear steps in the lower-speed ranges.

3. A highway type of operation requires sufficient low gear reduction to meet all grade demands, but emphasis would be placed on having useable gear steps in the upper-speed ranges.

4. In all cases, better performance will be achieved when high engine rpm with corresponding high horsepower is available at the point where each shift is picked up.

There are certain characteristics present in the ratios of the various transmissions which will tend to specialize them for certain types of truck operations. A summary of these characteristics is briefly outlined here.

1. Overdrive transmissions will generally combine well with two-speed axles for highway type of operations. These combinations usually give three to four good gear steps in the upper speed ranges, which make for flexibility in performance at highway road speeds. Even though the low gear in overdrive transmissions has less reduction, the low side of the two-speed axle will usually give sufficient total reduction to handle loads on average roads. Caution must be used when recommending an overdrive transmission combined only with a single speed axle, to be sure that sufficient gradeability is available.

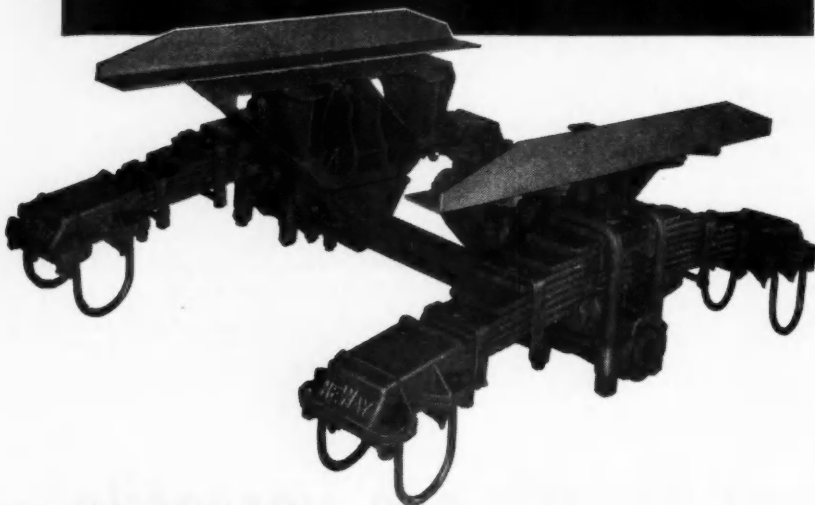
2. "Short-fourth" transmissions are direct-in-fifth transmissions which also combine well with two-speed axles for highway type of operations. They have a fourth gear ratio of about 1.15, with first, second and third gears of the same ratios as the overdrive types. The "short-fourth" transmissions also give good gear steps at the upper speed ranges, as do the overdrives. However, they reduce top geared speeds to around 50 to 55 mph which is an advantage to those operators not requiring fast road speeds. This transmission type is recommended with two-speed axle.

3. The regular direct-in-fifth transmissions give more gear reduction in the low ranges and for this reason are better suited for operations requiring greater total gear reduction. These direct-in-fifth transmissions are well suited for operations in which a single speed axle is satisfactory. However, they can also be combined with two-speed axles to achieve closer gear steps and high performance in the lower speed operating ranges.

4. Auxiliary transmissions can be given two general terms; "highway type" and "off-highway type." The highway type includes those which have ratios in the order of 1.25 in low, 1.00 in direct, and 0.85 in high. These ratios will result in short gear steps throughout the entire speed range and will also result in a good shift progress.

(TURN TO PAGE 142, PLEASE)

NO lubrication with the NEWAY TANDEM SUSPENSIONS



- EASY RIDE AND EASY HANDLING
- NO ROAD-HOPPING OR TIP-OVER ACTION
- NO RADIUS RODS TO ADJUST
- PERMANENT ALIGNMENT
- LOAD EQUALIZED BETWEEN AXLES
- THOROUGHLY ROAD TESTED AND PROVEN IN SERVICE



Operators report as many as 200,000 miles of service with no maintenance expense or down time. The Trunnion shaft is mounted on two rubber bushings, eliminating the necessity of lubrication at this point. Prove to yourself as others have, that NEWAY EQUIPMENT can cut your operating costs. See your NEWAY DEALER today. Send for Bulletin No. 62.

NEWAY Equipment
Company

Muskegon, Michigan, and
201 S. E. Washington St., Portland, Oregon

ALSO MANUFACTURERS OF THIRD AXLES FOR TRUCKS AND TRACTORS

QUAKER STATE SUPERFINE LUBRICANTS



Constructed for

STRENGTH

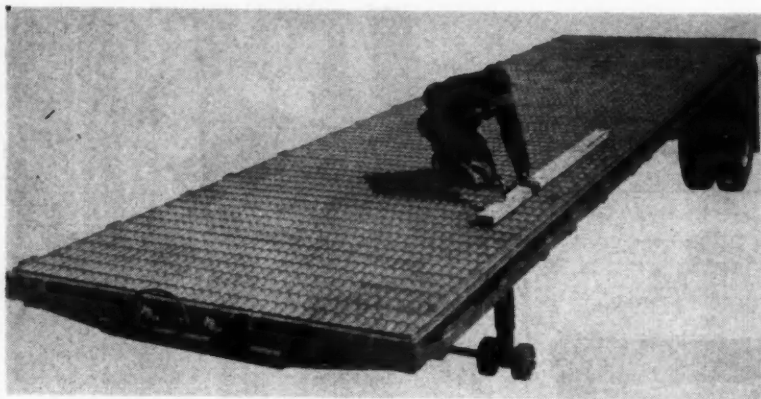
● In the building of this skyscraper, every cross-beam counts . . . every rivet plays its part toward making the finished construction able to withstand the ravages of time and use.

And in refining Stabilized Quaker State Quadrolube, no detail is overlooked to make it the finest gear lubricant produced anywhere in the world. Its stubborn resistance to pressure, heat, cold . . . moisture, rust and corrosion means more protection and longer life in transmission and differential systems.

The Quaker State brand name—on the familiar green-and-white Quaker State package—is your symbol of the best in lubrication.

A COMPLETE LINE OF FINEST QUALITY LUBRICANTS

- Quaker State Super Quadrolube
- Quaker State Super Quadrolube X-SCL
- Quaker State Viscous Lubricant
- Quaker State Wheel Bearing Lubricant
- Quaker State EXPP2 Lubricant
- Quaker State Universal Joint Lubricant
- Quaker State Waterproof Lubricant
- Quaker State Quadrolube



New Strick Trailer

A new 30-ft, 7000-lb flat trailer, the "Mono-Deck," has been introduced by the Strick Co., Philadelphia, Pa. It has an all steel superstructure, with a nailable steel floor. The trailer requires no wheel pockets, has no frame "goose-neck" and is equipped with the Strick running gear.

THE BIEDERMAN TRUCK



**An All-Star Truck
Constructed of All-Star Units
Doing an All-Star Job Since 1920**

DEALERS: Compare the Biederman National Standard Model with any truck on the market and you will agree that it is an All-Star team in itself.

Only the most sturdily constructed units of America's leading manufacturers are built into it.

Biederman Trucks win by performance. Inquiries regarding dealership solicited.

WRITE, WIRE or PHONE

**BIEDERMAN MOTORS CORPORATION
CINCINNATI 14, OHIO**

Charts Guide Selection

Continued from Page 140

sion. The off-highway auxiliary includes those which have ratios in the order of 2.50 in low, 1.00 in direct, and 0.75 in high. These ratios give increased maximum reduction and closer gear steps in the lower-speed operating ranges. When combining main transmissions with these auxiliaries, care must be taken not to exceed safe propeller shaft or axle speeds. As a general rule, in gasoline powered trucks, an overdrive main transmission cannot be used with an auxiliary transmission.

Constructing Shift Charts

THE construction of shift charts can be done easily through the procedure outlined here. Calculations can be accomplished by simple division and multiplication. The basic formula for computing geared speeds is as follows:

$$\text{MPH} = \frac{\text{RMP} \times 60}{\text{R} \times \text{M}}$$

MPH = Miles per hour vehicle speed.
RPM = Engine revolutions per minute.
(use governed or recommended engine speed.)

60 = Constant to convert minutes to hours

M = Tire revolutions per mile

R = Combined ratio. (Transmission x Axle x Auxiliary)

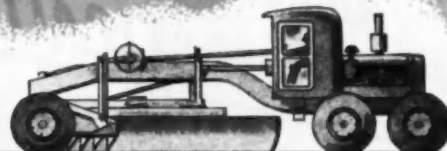
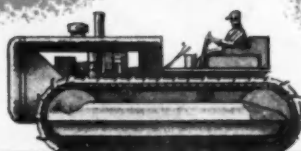
When you need to figure a series of speeds for a shift chart, the step of computing combined ratios (R) for each gear position can be eliminated. First calculate the mph at governed engine speed for transmission in direct. For this step, the value for R in the above formula becomes the axle ratio rather than a combined ratio. To obtain the mph for each transmission position, this speed in direct is then divided by each transmission ratio.

Prepare a table which is arranged somewhat like the following, and record the speeds in direct:

(TURN TO PAGE 144, PLEASE)

STOP *Clutch Trouble*

...with
**VELVETOUCH
MATCHED FACING
SETS**



Heavy duty hauling and earthmoving units stay on the job longer when you install Velvetouch Matched Facing Sets. Because Velvetouch clutch plate combinations give you four friction surfaces instead of the conventional two! You get extra clutch capacity . . . extra hours of service . . . extra freedom from adjustment and repair. And with Velvetouch, you can salvage worn and heat checked flywheels and pressure plates for additional savings! See your jobber, our nearest branch . . . or write The S. K. Wellman Company, 1374 East 51st Street, Cleveland 3, Ohio.



Velvetouch

THE S. K. WELLMAN CO. WAREHOUSING CENTERS

ATLANTA—119 14th St., N. E.
Atlanta 5, Georgia

CHICAGO—1500 South West-
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CLEVELAND—1392 East 51st
St., Cleveland 3, Ohio

DALLAS—3407 Main Street,
Dallas 1, Texas

LOS ANGELES—1110 S. Hope
Street, Los Angeles 15, Calif.

PHILADELPHIA—1545 West
Belfield Ave., Philadelphia, Pa.

PORTLAND—636 N. W. 10th
Ave., Portland 9, Oregon

SAN FRANCISCO—424 Bryant
Street, San Francisco 7, Calif.

TORONTO, ONTARIO
The S. K. Wellman Co. of Canada,
Ltd., 2839 Dufferin St.

EXPORT DEPARTMENT—
8 So. Michigan Ave.
Chicago 3, Ill., U. S. A.

WASHINGTON OFFICE—
1101 Vermont Ave. N. W.
Washington 5, D. C.

Charts Guide Selection

Continued from Page 142

In the case of a two-speed axle, find the mph in direct for both the low and high ratios, then divide by each transmission ratio. For an auxiliary combination, find the mph in double

207VO		16600 Axle		205V		22M Axle—5531B Aux.		
Trans. Ratios		Lo 9.04	Hi 6.50	Trans. Ratios		Lo 2.35	Dir. 6.70	Hi 0.85
1st	6.06	.....	.....	1st	7.56	.....	.....	.....
2nd	3.50	.....	.....	2nd	4.38	.....	.....	.....
3rd	1.80	.....	.....	3rd	2.40	.....	.....	.....
4th	1.00	40.85	56.90	4th	1.48	.....	.....	.....
5th	0.88	.....	.....	5th	1.00	21.87	51.61	60.60

Always in adjustment

Always plenty of "Pedal"

with

Brakemaster

Adjusts in transit
AUTOMATICALLY

Increases life of lining 25%—brake drum 40% . . . cuts inspection and adjustment costs 75%!

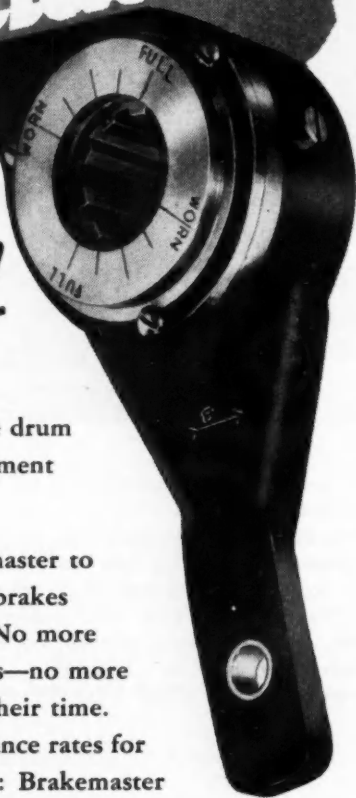
Imagine the savings with a Brakemaster to automatically take up the slack in brakes—while the vehicle is in operation. No more needless inspections or adjustments—no more brakes and tires worn out before their time. Reduces accidents, too—cuts insurance rates for many users. Another safety feature: Brakemaster has a dial to show how far the brake lining is worn.

Brakemaster is easily installed and gives lasting, maintenance-free service. Write for all the proven facts today!

THE brakemaster corporation

4603 WEST ROOSEVELT ROAD

CHICAGO 50, ILLINOIS



direct; divide this by the low and high auxiliary ratios, and each of these three by each transmission ratio.

In drawing the lines for a shift chart, the first step is to insert the mph scale in the third column from the left and the engine rpm scale across the bottom. It is convenient to set the engine governed or recommended rpm at the extreme left line of the squares. Next, mark the computed mph points for each gear position on this rpm line, which is also the same rpm value you used in the formula. With a ruler or straight edge, draw a line from the zero rpm point to each one of the mph points. In effect, each of these diagonal lines need be drawn only from the mph mark down to where the next lower gear position will connect with it.

Draw the gear position lines for each shift and at the same time extend them to make the connecting lines from the top to bottom of each shift. Fill in the transmission and axle (or auxiliary) positions, obtaining these from your table of computed speeds. Care should be taken to assign the correct gear position to each mph value plotted on the shift chart. Fig. 2.

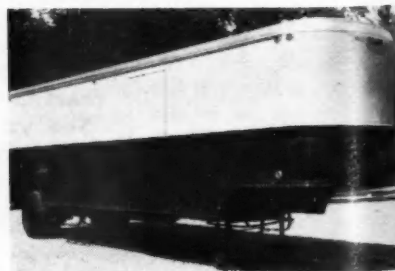
END

Please Resume Reading Page 58

Illinois Truck Rodeo

Driver contestants from all points throughout the state will migrate to the Central Motor Freight Assn. rodeo and motor equipment show to be held at Exposition Gardens, Peoria, Ill., August 15, 16, 17. To qualify, the driver must have an accident-free record for 12 months prior to the Rodeo entry date and be occupationally domiciled in Illinois.

Lightweight Warehouse Van



Newest introduction of the Gramm Trailer Corp., Lima, Ohio, is this lightweight "Warehouseman" van of frameless construction. The design is basically to increase payload with a corresponding drop in body weight. It is a 32-ft job with 1840 cu ft capacity, weighing 8774 lb and equipped with vertical landing gear. A 24-in. inside tailgate is concealed inside body.

It's fast... easy... safe
...it's a HEIN-WERNER!



Truck drivers who speak from experience say that a Hein-Werner Hydraulic Jack can't be beat for ease of operation or for dependability.

You, too, will like these sturdy jacks. They don't tip easily . . . They don't leak and lose lifting power . . . They stand up under loads — *safely*.

The precision-built, easily serviced pumping unit is an outstanding feature. Other Hein-Werner features include pressure tested castings, and the "Heinite" piston—proven by tests to withstand ten times the wear of conventional cups or packings.

These dependable jacks are made in models of 3, 5, 8, 12, 20, 30, 50 and 100-tons capacity . . . Complete line also includes "Bumper-Lift" Hydraulic Jacks for passenger cars, "Swift-Lift" and Service Jacks for shop use, and "Push and Pull" Hydraulic Jacks for body, fender and frame repair work.



★ Ask your jobber or write us for details

HEIN-WERNER CORPORATION, Waukesha, Wis.



Parking Lot Heaters for Toronto Buses

Continued from Page 54

gether total \$4,070, which means a cost per year per vehicle of \$203.50.

From all this it can be seen that, cost-wise, the outdoor storage methods win all along the line. However, there are some requirements and disadvantages which must be taken into account before a big switch either to booster or parking lot heaters.

Other Considerations

IN our own case we've used booster heaters since 1948 and now have 42 buses booster equipped. One important thing learned from this experience is that you must have a top-line generator so that batteries are fully charged when a bus has finished its last run of the day. Otherwise the heater will

likely run it flat by morning. This means that all generators must give a good charge at idle—a particularly important feature on city buses.

With some of our earlier boosters we ran into trouble through having too little generator capacity. Now, our new buses with booster heaters have low cut-in generators which will give a charge of 60-70 amps at idle, and our older units are being similarly modified.

On one type diesel-powered bus, used on city routes, we have found that engines run too cold at low outside temperatures. In these cases the booster heater is used while the bus is operating as well as during night storage. This dual use has worked out quite satisfactorily.

There has been no need to do this on the intercity routes, however, since the buses burn enough fuel to keep their engines warm.

Our experience to date with booster heaters has shown us that the heating unit has to be taken off for some type of repair about twice every season. Only limited repairs can be made with the unit in the installed position.

Parking lot heaters have been used by TTC for three heating seasons. We now have three parking lots so equipped, which together provide facilities for 60 buses. Apart from some oil burner trouble, which we expect to correct before the next heating season, the principle appears to be good, although we haven't yet had experience with temperatures below 10 deg. F.

The only apparent limitation to use of parking lot heaters is that the layout must be such that you can get

(TURN TO PAGE 148, PLEASE)



Route your trucks the shortest way every trip. The time and gas used by your drivers looking for unknown streets, driving all around Robinson's barn to make deliveries, will buy a hundred maps like Hearne's Street Map of your city and county area.

Street names are in big, black type, and instantly spotted with Hearne's patented, automatic Street Finder. And every map is mechanically indexed.

Over 100,000 truck owners use Hearne maps every day to give customers better service and cut truck mileage. Many users claim they save the cost of the map in a single day's use.

YOUR CITY MAP FOR 10-DAY FREE TRIAL

Send for cloth, cellophane-finished 44" x 65" map now. Stop delivery waste. Mark routes in crayon we supply. Washes off instantly. Use map for 10 days. Then, if you can get along without it, send it back... or send \$42.50 and it's yours.

MAIL TODAY OR USE YOUR LETTERHEAD

FREE EXAMINATION ORDER FORM

Hearne Brothers (America's Largest Manufacturers of Commercial and School Maps)

23rd Floor, National Bank Bldg., Detroit 26, Michigan.

Without obligation on my part, send me a map of my city and county area. After 10 days' FREE use in my office I'll return the map or remit \$42.50. Prices on cloth, cellophane, spring rollers, stainless steel and labor are going up! Order today!

Your Name _____

Company _____

Address _____

City _____

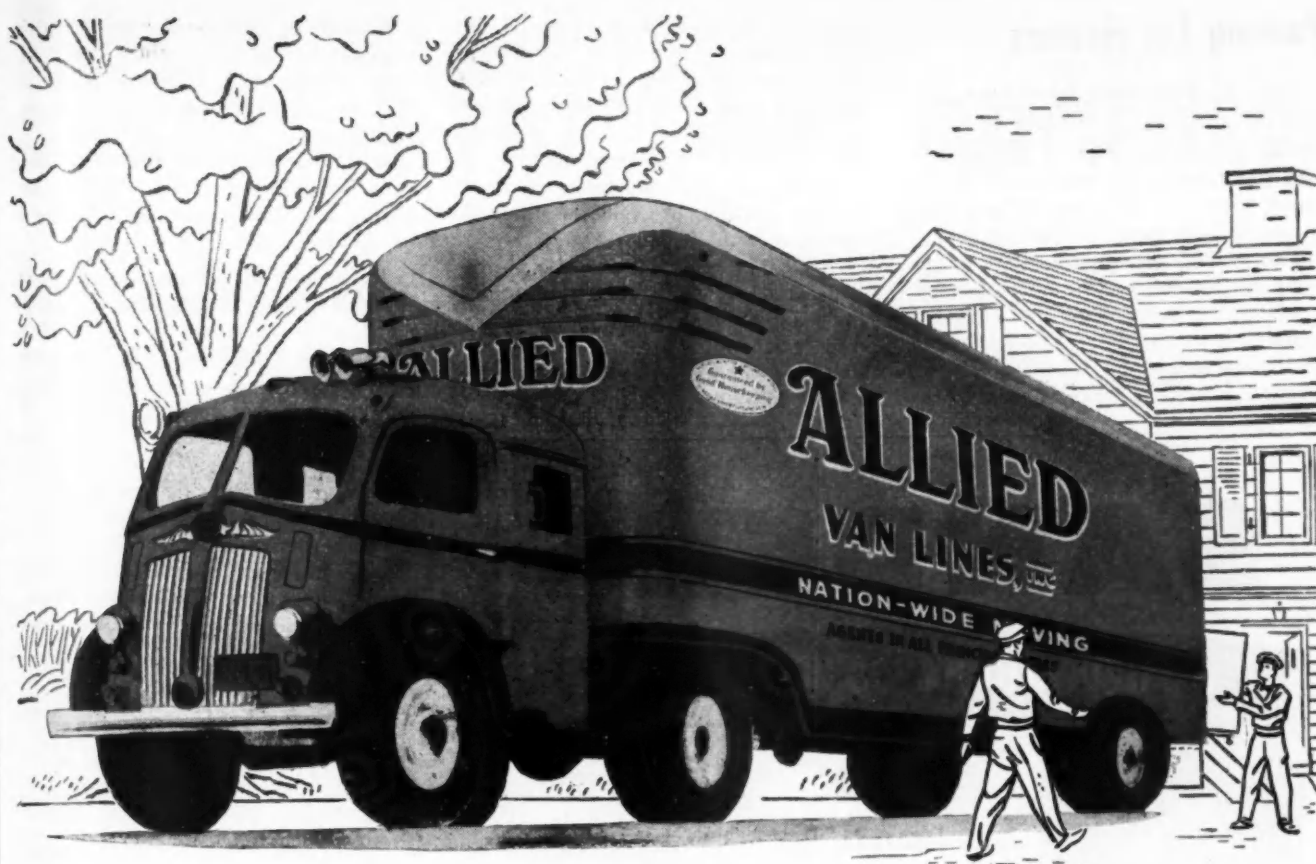
Zone _____

State _____

Portable Pipeline



Army Engineers are shown "re-loading" a new portable fuel supply line which can speed fuel delivery in combat areas. Developed by B. F. Goodrich, Akron, O., in cooperation with the Engineer Research and Development Laboratories at Fort Belvoir, Va., this rubber hose is the world's lightest weight gasoline hose. It can be laid from a vehicle moving at 15 miles an hour. The "pipeline" is the first large size hose ever made in continuous long lengths.



On the job FASTER...on the job LONGER with KEM[®] TRANSPORT Enamel



APPROVED for leading NATIONAL FLEETS

Sherwin-Williams KEM Transport Enamels are approved and recommended finishes for the fleet equipment of Allied Van Lines, Inc.—one of many large national fleet operators that have adopted Sherwin-Williams Automotive Finishes!



Paint takes a beating on long-distance moving equipment. It must be tough to withstand constant weathering—successive extremes of cold, moisture, sleet, snow, burning sun and the sandblasting effect of windstorms. It must identify the van line and help sell its services through good appearance.

Sherwin-Williams KEM Transport Enamels are formulated to stand up longer under such grueling conditions. That's why many companies operating large national fleets approve or specify KEM Transport Enamels as standard finishes.

These finishes speed up painting time, too. Cold weather . . . humid weather . . . hot weather . . . don't need to disrupt paint shop schedules or require unduly long lay-ups of equipment. KEM Transport Enamels are triple-tested for fast drying under all these conditions to reduce costly lay-ups . . . to get vans back on the job faster.

Call your Sherwin-Williams "OK" Automotive Jobber today, or write for name of distributor nearest you. The Sherwin-Williams Co., Automotive Division, Cleveland 1, Ohio. (Export Sales Division, Newark, N. J.)

SHERWIN-WILLIAMS

AUTOMOTIVE FINISHES

Parking Lot Heaters

Continued from Page 146

pipings around the edge of the lot. It isn't practical to put hose boxes in the centre of a lot because if you do, sooner or later they'll get hit.

The makers of parking lot equipment tell us they are now working on a method of overcoming this snag by coupling a series of buses together and passing warm water through all of them. (The general effect, pre-

sumably, would be like a line of elephants linked trunk to tail). But so far as we know, this system has not yet been tried out in service.

Last on the list of limitations of outside parking is the general difficulty of servicing, and the need for much more moving around of vehicles than is necessary with inside storage.

However, if a transit property is prepared to accept all these limitations (as we have done), and providing average temperatures are not exceptionally low, we can certainly recommend the outside storage methods.

One thing we cannot recommend is outside storage with electric block immersion heaters. This was tried by TTC a few years ago but proved unsatisfactory. The main disadvantage is that anti-freeze must be used to prevent freezing of heaters. As well, the wiring installation and maintenance is costly and sometimes a nuisance.

Aside from bus storage problems in winter, another maintenance requirement is to keep vehicles adequately heated and ventilated. Our objective here is to bring plenty of fresh air into the bus, but to heat it before it reaches the passengers. This has the effect of slightly pressurizing the interior and thus reducing draughts from outside. It also provides a fresh atmosphere and reduces fogging of windows. In some buses fogging and frosting have been eliminated entirely, due to efficiency of the heating and ventilating systems.

Tricks Worth Trying

ALL this, of course, takes a lot of heat from the cooling system and in some cases has made it impossible to maintain engine temperature and keep radiators from freezing. The "impossible" cases under this head can only be cured by use of a booster heater in the manner already described. However, in some of the "difficult" vehicles we've been successful in the use of gimmicks to overcome this condition.

Gimmick 1 works this way: Sufficient hot water must be allowed to enter (TURN TO PAGE 152, PLEASE)

Trophy Winner

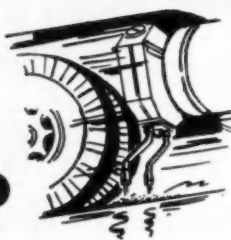


Carl L. Hoebner, general manager, West Coast division, Trailmobile Inc., is shown at extreme left, presenting to John Ruan, of Ruan Transport Corporation, Des Moines, Iowa, a bronze plaque and the Trailmobile Tank Truck Trophy at the mid-year meeting of National Tank Truck Carriers, Inc. at Coronado, Calif. Ruan has won the trophy two years in succession. Others in the group, right to left, are: C. Austin Sutherland, managing director, National Tank Truck Carriers, Inc.; and Frank A. Beyer, manager, Springfield, Mo. plant, Trailmobile Inc., a subsidiary of Pullman Inc.

SANDERS

as dependable as your brakes

**AIR
and
VACUUM
OPERATED**



"AIR-TRAC"
Air-operated
Model 50-A



"VAC-TRAC"
Vacuum-operated
Model 50-V

Proved under all kinds of winter road conditions, throughout the past two years, these "Air-Trac" and "Vac-Trac" sanders provide traction regardless of weather conditions.

Compare the value of your shipments and the necessity of maintaining schedules with the small cost of having these sanders to insure over-the-road safety in slippery, icy weather.

Located directly in front of the driving wheels, the sanders — "Air-Trac" or "Vac-Trac" — are actuated by a small valve at driver position. They deliver a generous supply of grit through patented, weatherproof nozzles — in the center of each wheel tread.

May we send you Bulletin 450-L — in the interest of safe travel for your trucks?

THE LINTERN CORPORATION

P. O. BOX 428

PAINESVILLE, OHIO

money—for fleet operators

Specially engineered for Trucks & Buses, Gates "T" Belt cuts belt costs 50% to 80%

That big saving on belt replacement costs isn't all...

The longer service life built into the Gates Truck Belt makes money for truck operators in another very important way:

IT CUTS DOWN ROAD DELAYS—helps keep trucks on schedule, helps get shipments delivered *on time* and *at a profit*.

From coast to coast truck operators have told us *in writing* that Gates Truck Belts have cut their belt costs *in half*—*and much more than half*. These practical men—Fleet Managers, Purchasing Agents, Maintenance Superintendents—*also* declare that even this substantial saving is small compared with the savings they make by practically eliminating fan belt failures on the road.

After all, the *net operating time* of your units is what makes you money. Road delays cut into net operating time—and profits. That's why it pays real dividends to get a belt that keeps net operating time *UP* and belt replacement costs *down*. The Gates Truck Belt will do that for you—just as it has for all the fleet operators listed here—and *thousands* of others.

There are Gates Belt Jobbers in every distributing center who can supply the belts you need promptly.

The Gates Rubber Company

DENVER, U.S.A.—World's Largest Maker of V-Belts

BUFFALO, NEW YORK
Buffalo Transit Co.

LOS ANGELES, CALIF.
Asbury Transportation Co.

PORTLAND, OREGON
Damascus Milk Co.

DENVER, COLORADO
Pacific Intermountain Express
(PIE)

PITTSBURGH, PA.
Oriole Motor Coach Co.

JOLIET, ILLINOIS
Treloar Trucking

WELLSBORO, PA.
H. W. Taynton Truck Lines

ALBUQUERQUE, NEW MEXICO
Albuquerque Bus Co.

ST. PAUL, MINN.
Glendenning Motorways, Inc.

PHOENIX, ARIZONA
Fisher Contracting Co.

& BUS V-BELTS

Parking Lot Heaters

Continued from Page 148

ter the radiator to prevent freezing with the radiator shutters closed and in their worst average condition. To reduce the amount of heat required for this purpose a piece of insulation board is inserted between the shutter and the radiator core, reducing the effective size of the core. The size of this shield must be carefully selected so that the engine will not overheat

during the occasional mild days in spring and fall.

Gimmick 2: It's possible to obtain by-pass thermostats for the cooling system which will permit full flow through the engine and heating system and bleed only the required amount of hot water through the radiator. One manufacturer is using two thermostats for this purpose. One is in the normal position in the engine outlet and opens as the temperature increases. The second is located in the by-pass and closes as the water temperature increases. In this way,

full flow is obtained at all times and the required amounts of hot and cold water entering the engine are automatically blended.

Gimmick 3: Underpans on buses with underfloor engines and use of insulating material on exposed parts of the cooling system also help to conserve engine heat. (Although we haven't used them ourselves, variable pitch fans are also reported to be beneficial.)

Lubricants are not a problem in our winter operation and on all buses except the few on Northern Ontario routes, the same grades are used all year round. These are:

Engines	SAE 30 oil
Differentials	SAE 90 gear oil
Transmissions	SAE 50 engine oil
Steering boxes	SAE 90 gear oil

On the northern route buses, which have been found to develop stiff steering in 30 deg.-40deg. below zero temperatures, the steering boxes are filled with SAE 75 gear oil, which passes a channel test at -50 deg. F.

Our only other winter problem has been some degree of underframe corrosion due to the use of salt or calcium chloride on city streets to speed removal of ice. However, we've learned from experience that the effect is not severe providing vehicles are undercoated and the proper aluminum or steel alloys are used by bus manufacturers.

END

Please Resume Reading Page 55

International Wins "Oscar"



John B. McCullough, left, chairman of the National Committee on Films for Safety, New York City, presents his organization's top national award in the transport and transportation safety field for non-theatrical films to W. K. Perkins, right, manager of sales, motor truck division, International Harvester Company, Chicago, for Harvester's sound motion picture "Day in Court." Witnessing the award presentation is Walter Mullady, center, president, American Trucking Association, Inc.

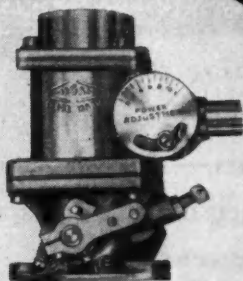
COMMERCIAL CAR JOURNAL, August, 1952

Improved Engineering

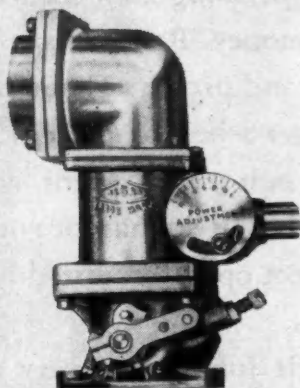
in the NEW

ALGAS

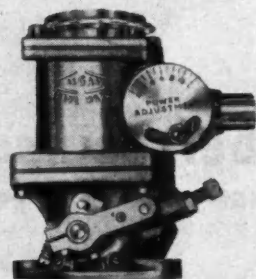
Butane-Propane Carburetor



VERTICAL CARBURETOR
WITH STRAIGHT TYPE
AIRHORN ADAPTER



HORIZONTAL CARBURETOR
WITH STRAIGHT TYPE
AIRHORN ADAPTER



VERTICAL CARBURETOR
WITH DONALDSON TYPE
AIRHORN ADAPTER

ANOTHER important engineering improvement puts ALGAS carburetion equipment far ahead! The new ALGAS 1400 Series Carburetor is now designed with a removable airhorn, eliminating the necessity for changing the air cleaner to fit the carburetor.

Provides Greater Flexibility

Universal design means that each model may be used for a variety of airhorn sizes, either straight or Donaldson type.

Makes Installation Easier

Three principal parts, each entirely separate, make installation a simple matter. Mixer assembly may be rotated into any one of four positions.

Write or wire now
for complete information.

AMERICAN LIQUID GAS CORPORATION

DEPARTMENT M-28
1109 SANTA FE AVENUE
LOS ANGELES 21, CALIFORNIA

Conference Corner

Continued from Page 6

ratio has been raised considerably and the spark advance increased in an effort to compensate for the lower heat value of this type fuel. In spite of a general freedom from detonation and pre-ignition many users of LPG select a cold plug in an effort to increase plug life by decreasing gap wear. They can often safely do this because of comparative freedom from fouling problems.

Cooling is also an important factor. This is true because it also will affect the detonation characteristics of an engine in operation. The cooling around the spark plug boss also has a definite bearing on the operating temperature of a spark plug. A thermocouple seat gasket may be used as an indication of proper or improper cooling at this point.

In engine operation a good rule to remember is the following: Other things being equal, the operating temperature

of the firing end of the plug will increase with the presence of detonation, increased engine output and/or increased engine speed.

The required life of a plug is also an important factor to consider. In other words, if reliable operation for a limited time is desired, as in a race car, the plug selection should be made with this in mind. If, on the other hand, long life is the more important factor, it should, therefore, be the governing factor:

The economics of plug selection must also enter the picture. The foregoing

statement concerning plug life might well be repeated here. Bear in mind that the original equipment plug was a compromise based on expected normal service. This selection is necessarily limited by the present state of engine, fuel, and spark plug development. Here the cost of removal, servicing, servicing equipment and replacing the plugs should be studied. This is especially important in big fleet operations or very large installations.

END

Please Resume Reading Page 10

WHERE WEIGHT COUNTS



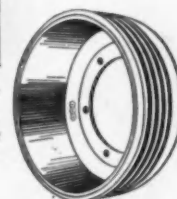
GUNITE WHEELS

DESIGN TELLS THE STORY

Gunite truck and trailer wheels are skillfully engineered to stand the gaff of "peak-load" operation. Tubular-spoke design provides maximum strength through accurate weight distribution. Floating rim bolt assures easy servicing and true alignment with rim clamp. Gunite wheels are made of quality cast steel . . . yet are light in weight. To cut cost per mile, specify Gunite . . . the wheel that's designed to take the bigger loads over the rougher roads.

and GUNITE DRUMS too!

An integral part of every Gunite wheel assembly is the Gunite brake drum. Designed of superior Gunite metal, it resists heat check, fading and flexing. Gunite drums cause less braking wear, assure more miles of service.



GUNITE

GUNITE FOUNDRIES CORPORATION, Rockford, Illinois

Pritchard to Head Tank Group

Election of William M. Pritchard, vice president of Costal Tank Lines, Inc., York, Pa., as president of National Tank Truck Carriers, Inc., at the group's midyear meeting. Other officers were John Ruan, of Ruan Transport Corp., Des Moines, Iowa, vice president; Emanuel Alboum, Tank Truck Rentals, Inc., Lancaster, Pa., treasurer; Frank L. Grimm, O'Boyle Tank Lines, Washington, D. C., assistant treasurer, and C. Austin Sutherland, secretary.



"Wheel flaps! Another pesky Commerce Commission rule!"

COMMERCIAL CAR JOURNAL, August, 1952

Battery Side of Voltage Regulation

Continued from Page 65

motive force) as it is sometimes called. Note, for instance, that 7.4 volts puts only 2 amperes into a half-charged battery at zero, but it puts 21 amperes into a fully-charged battery at 120 deg F. In other words extremes of temperature can completely upset the pattern of charge voltages based on state of charge at 80 deg F. This is a

serious matter in actual car operation since various parts of our country are subject to wide variations in temperature.

The effect of temperature on regulation is further intensified by the fact that the regulator too is affected. Changes in the regulator itself result from natural changes in conductivity of

the coils with variations in temperature. These changes in conductivity cause the coils to vary in magnetic strength, which in turn causes a corresponding variation in the limits held by the regulator. A regulator thus tends to hold a lower voltage limit while cold and a higher limit while hot even though the "setting" is not changed. These tendencies are partially offset by the use of temperature-sensitive bimetal hinges on the armatures of the regulating units. The hinges are designed to decrease spring tension automatically as temperature increases inside the regulator, thus compensating for changes in the magnetic strength of the coils. Since the hinges do not become effective until the regulator warms up, however, the voltage setting may continue to rise for 15 or more minutes after a cold start.

Because the limits actually held by the regulator are dependent upon the temperature of the regulator, it is very important to control its temperature while checking and adjusting. For this reason service instructions clearly specify that all regulator checks and adjustments must be made at "operating temperature" and under carefully controlled conditions. These conditions include the requirement that all checks be made with the cover on in order to avoid excessive cooling of the bimetal hinges. Settings made without observing the specified conditions are erratic

(TURN TO PAGE 158, PLEASE)

Pressurized Gas Transport

A new type of tank trailer has been built in Wichita, Kan., by the V. I. Moser Tank and Trailer Co. for hauling either casing-head gas or regular gasoline. Casing-head gas is a natural gas by-product of oil wells that must be held under constant pressure. This trailer maintains 35 psi. Former fire regulations prohibited transportation of casing-head in containers over 42 in. The development by Moser, however, has raised this limit, permitting



the tanks to be made 72 in. in diameter. The tank is made from 1/8-in. sheet steel 4 ft wide welded into 8-ft sections and rolled into cylinders. The cylinders are then welded together to form the main part of the tank. Spherical heads for the ends are made at steel mills, to Moser specifications. Welds are from the inside and out, and the tanks are reinforced by baffle plates every 5 ft. These baffles are designed primarily to prevent the contents from splashing while in transit, but it also increases the rigidity

PERFECTION PERSONIFIED . . .

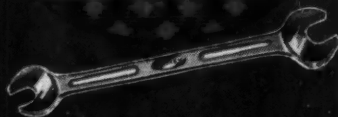


You think in terms of perfection. Your work reflects your thinking. There can be a sureness in the handling of tools that guarantees perfection. Naturally, real mechanics won't compromise on tools—only the finest are good enough.

Bonney wrenches are perfect by rigid standards. That is why mechanics call them America's finest—unmatched for lightness, strength, balance, and precision.

Bonney wrenches are the pride of the men who make them . . . the pride of the men who use them.

**BONNEY
TOOLS**



Perfection in each operation results in the amazing output of America's manufacturers of cars, trucks, buses, and military equipment. Names such as Ford, Chrysler, Hudson, Packard, Nash, Studebaker, identify millions of vehicles that measure up to the master mechanic's standards

BONNEY FORGE & TOOL WORKS
Allentown, Pennsylvania

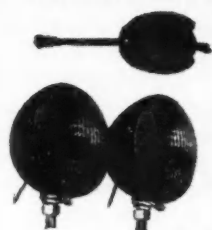
FOR LOWER RUNNING COSTS.

Count on

Guide

FOR COMPLETE LAMP AND SIGNAL EQUIPMENT

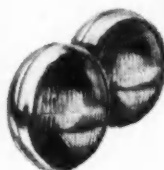
DIRECTIONAL SIGNALS



Guide offers you Class A Type 1 signal that is approved in all states where approval is required. Heavy-duty lamps, self-cancelling switch (switch can also be used manually). For front and rear installations, single face, double face and flush mounting types.

Guide Directional Signals are easy to install and are durably constructed to the highest standards. Guide quality insures dependable service.

FOG LAMPS



Guide Fog Lamps for all makes of trucks and buses are packaged in pairs complete with fused switch and wiring for interchangeable mounting for attachment to splash pan, bumper or front fender. They are designed to meet your every requirement for adverse weather driving conditions. Universal application including late models.

MULTI-PURPOSE LAMPS

The uses for Guide Multi-Purpose lamps are many—it is a spare sealed-beam unit for headlamps, a versatile trouble lamp, a portable spotlight, a handy all-purpose portable lamp. Plugs in the cigar lighter or clips to any current source—13 ft. of lead wire, bracket for carrying can be mounted under dash. Also available with supplementary red lens. No fleet operator will want to be without this Guide innovation.



GUIDE LAMPS

A GENERAL MOTORS PRODUCT



A UNITED MOTORS LINE

DISTRIBUTED BY WHOLESALERS EVERYWHERE

Check NOW with your Guide Lamp Supplier

Make it a point to check with your Guide Lamp supplier and take advantage of his many fine services. Your Guide supplier and his staff are men of importance in your area and have a complete knowledge of fleets and fleet problems. He is backed by Guide—the world's largest producer of lamps for automobiles, trucks, buses and tractors. You can count on Guide for complete lamp and signal equipment.

YOU CAN DEPEND ON ALL UNITED MOTORS LINES FOR LOWER COST OPERATION

DELCO Batteries
AC GAUGES, Speedometers and Rebuilt Fuel Pumps
SAGINAW Jacks
MORaine Engine Bearings
DELCO Radio Parts
ROCHESTER Cigar Lighters
HYATT Roller Bearings
INLITE Brake Lining
HARRISON Heaters
GUIDE Lamps
DELCO Clocks
NEW DEPARTURE Ball Bearings
DELCO Shock Absorbers
DELCO-REMY Starting, Lighting & Ignition
MORaine Gasoline Filters
HARRISON Thermostats
KLAXON Horns
HARRISON Radiators
ROCHESTER Carburetors
DELCO Hydraulic Brakes

Voltage Regulation

Continued from Page 156

and difficult to reproduce. Failure to realize this fact is responsible for most of the complaints about regulators "failing to hold adjustment." Also, false settings thus obtained are responsible for many forms of electrical trouble resulting from too high or too low a voltage limit. (Many miscellaneous factors also affect the operation of the regulator and cause false settings.

Among these are external vibration and mechanical distortion of the regulator base caused by overtightening the cover screws. Excessive vibration of the regulator mounting surface can be especially harmful by causing the regulator to operate at a voltage considerably below the actual setting.)

An interesting sidelight of the effect of temperature on the regulator is the fact that even the location of the regulator on the vehicle often is a factor. For instance, a regulator mounted on the firewall of a vehicle will hold a different average setting in operation than

when mounted near the radiator where the air is cooler. This seemingly insignificant matter of location thus can become a major cause for concern in the service field if the effects of the change tend to upset an already critical balance in the electrical system.

Since the battery is essentially a chemical product, its charging properties are often altered by chemical changes within the battery itself. Changes of this kind may be brought about deliberately by the manufacturer or they may result from abuse, too strong electrolyte, prolonged operation at high temperatures, and the addition of impurities. Any significant change made in the charge voltage characteristics of a battery will definitely affect regulation and may be responsible for early failure if overlooked. Sulfation, of course, is a very common and very troublesome form of chemical change. Since sulfation is likely to occur whenever batteries are neglected for a period of time it can, and does, occur frequently in new batteries as well as in used ones.

The common practice of delivering new cars with slightly sulfated batteries undoubtedly has been responsible for a sizable percentage of charging system troubles in the last few years. A battery which is only slightly sulfated often will not accept an adequate charge rate from the generator and rapidly starves to death on the job. Battery men can find no better argument for systematic care of batteries in stock than the necessity for protecting the vital charge voltage characteristics. A battery with abnormal charge characteristics simply cannot exist under the close voltage limits in a modern vehicle.

(TURN TO PAGE 162, PLEASE)



GarWood

Elevating End-Gate

This hydraulic-powered elevating end-gate puts speed in your heavy package deliveries by slashing the time for loading and unloading trucks. Also, it prevents damage to merchandise and avoids lifting injuries to employees.

Just roll the load on at ground level (or any level below truck floor), touch the lever and up it goes. No stooping... no heaving. Coming down is just as easy. Stops wherever it is when lever is released... or stops automatically at truck floor or ground level.

While it is lifting and lowering your loads, the Gar Wood Elevating End-Gate lifts your profits and lowers your costs. Fits standard trucks and trailers one ton or larger. Ask for Bulletin L-101.

52-14



GAR WOOD INDUSTRIES, INC.

Wayne Division • EXECUTIVE OFFICES, WAYNE, MICHIGAN

TRUCK EQUIPMENT: Dump Truck Bodies & Hoists, Winches & Cranes, Refuse Collection Bodies, Elevating End-Gates. CONSTRUCTION EQUIPMENT: Excavators, Scrapers, Dozers, Ditchers, Spreaders, Finegraders, Truck-Mounted Road Graders.



I came down to see that "Dolly" you're always "handling so well" in your sleep

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modern



Specify **CAMPBELL** *Lug-Reinforced* TIRE CHAINS ...for maximum safety...minimum operating cost

Only Campbell Chains have the patented *Lug-Reinforced Construction* that means greater traction on ice and snow . . . greater traction that guards against skids and side-slips.

The extra metal in Campbell lugs means extra mileage . . . longer wear . . . less link breakage. Campbell gives you the lowest operating cost per mile on ice or snow.

Campbell color-coded bags save time in handling and storage. Available in three grades for all cars, trucks and buses: *Lug-Reinforced* for greatest traction and longest wear . . . *Highway Service* for regular use . . . *Mud Service* for off-the-road duty.

Campbell *Lug-Reinforced* Tire Chains for fleet passenger car service are packed in sturdy boxes, and every box includes the easy-to-use Chain Applier.



Mud Service
Single Pneumatic



Highway Service
Dual Pneumatic



Lug-Reinforced
Dual-Triple



Lug-Reinforced
Interchangeable
Cross Chains

MAKE SURE YOU HAVE A SET OF CAMPBELL TIRE CHAINS FOR EVERY UNIT IN YOUR FLEET

TIRE CHAINS

Voltage Regulation

Continued from Page 158

“Tailored” Settings

REGULATOR settings must be adapted to the battery and to the type of service. The choice and proper adjustment of the voltage limit on any vehicle largely determines the success or failure of the electrical system on that vehicle. An unsatisfactory voltage regulator setting can cause damage ranging from burned out light bulbs to complete destruction of the battery or generator.

Granting that the voltage regulator setting is very important, the \$64 question then becomes, "what is the proper setting is very important, the \$64 question answer this question numerically, for lead-acid batteries by quoting a "satisfactory range" and recommending an intermediate value as the "setting." (Proportionate "ranges" and "settings," of course, are provided for 6, 12, 24 and 32-volt systems.) These numerical "settings" are entirely realistic in each bracket, but they must not be applied blindly to every application without reference to variables or type of service. In other words, the voltage regulator setting must be "tailored" to

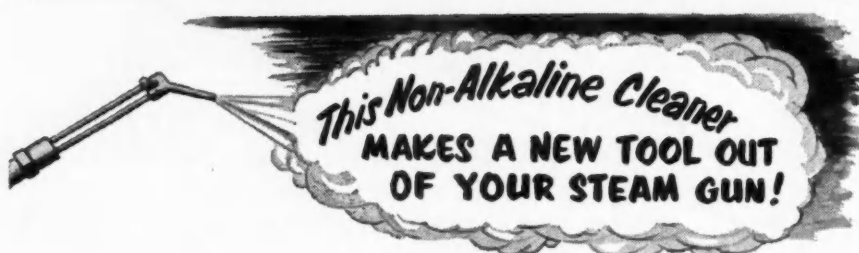
the requirements of a particular job, and any setting within the range may be used. The "setting" listed in each specification is intended to be used only as a sort of average or normal value. It serves as a starting point in adjusting a regulator for the first time until service data are available for a more accurate setting.

The ideal setting may be defined as, "that setting which will keep the battery at or near full charge with a minimum use of water when the vehicle is used in its customary way." Such a definition makes it easy to see what must be done. We simply set the regulator within the range and make frequent checks of the battery over a period of several days or a few thousand miles of service. If the battery loses water rapidly, the setting is too high and should be reduced. (A weekly usage of 1 to 2 oz of water per cell has been found to be acceptable for batteries in continuous operation.) If the battery falls below three-fourths charged, the setting is too low and should be raised.

In making the check for the ideal setting surprising differences between batteries often will be noted. For instance, different charge voltage characteristics may be found on new bat-

(TURN TO PAGE 164, PLEASE)

(TURN TO PAGE 164, PLEASE)



Because it contains no alkaline salts, Magnus 72 offers you steam and vapor cleaning on a basis of speed, economy and safety that has never been reached before. Magnus 72 is neutral and non-corrosive . . . safe for non-ferrous as well as ferrous metals. And it will not attack paint or other protective coatings. It is non-fuming . . . you can use it indoors and your workers won't dislike using it—as most of them do with ordinary steam cleaning compounds. It will not clog coils of steam cleaning equipment.

Safe for Electrical Connections, too!

Magnus 72 is non-conducting. That means you need no longer worry about the hazard of short-circuits in electrical connections. As for cleaning . . . this unique material gives you fast, thorough results, while it's easy to mix and proportion, due to its liquid, concentrated form. It is not recommended for heavy-duty cleaning.

TRY IT!

Magnus 72 is used in your steam gun just like ordinary steam gun cleaners. Ask for details on our 30-day trial offer, or just ask for a small try-out sample.

MAGNUS CHEMICAL CO. • 38 South Ave., Garwood, N. J.
In Canada — Magnus Chemicals, Ltd., Montreal.
Service representatives in principal cities.



MAGNUS

CLEANERS • EQUIPMENT • METHODS

Budd Wheel Distributors provide the same service described in this advertisement

AKRON—Motor Rim Manufacturers Co.
ALBANY—Wheels, Incorporated
ALBUQUERQUE—Wheels & Brakes, Inc.
ATLANTA—Harris Automotive Service, Inc.

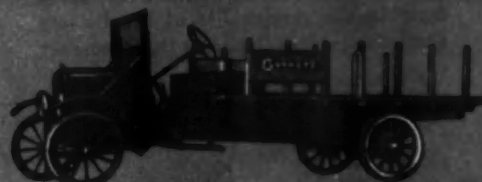
BALTIMORE—R. W. Norris & Sons, Inc.
BIRMINGHAM—Wheel, Rim & Parts Co.
BOSTON—New England Wheel & Rim Co.
BUFFALO—Frey, the Wheelman, Inc.
CHARLOTTE—Carolina Rim & Wheel Co.
CHICAGO—Stone Wheel, Inc.
CINCINNATI—Rim & Wheel Service, Inc.
CLEVELAND—Motor Rim Manufacturers Co.
COLUMBUS—Hayes Wheel & Spring Service
DALLAS—Southwest Wheel, Inc.
DAYTON—Stone Wheel, Inc.
DAYTON—Rim & Wheel Service, Inc.
DENVER—Quinn & McGill Motor Supply Co.
DES MOINES—Des Moines Wheel & Rim Co.
DETROIT—H. & H. Wheel Service, Inc.
EVANSVILLE—Auto Wheel & Rim Service Co., Inc.
FARGO—Wheel Service Company
FORT WAYNE—Wheel & Rim Sales Co.
GRAND RAPIDS—Rim & Wheel Service Co.
HARRISBURG—Standard Rim & Wheel Co.
HARTFORD—Connecticut Wheel & Rim Co.
HOUSTON—Southwest Wheel & Equipment
INDIANAPOLIS—Indiana Wheel & Rim Co.
JACKSONVILLE—Southeast Wheel & Rim Co.
KANSAS CITY—Borbein, Young & Co.
KNOXVILLE—Harris Automotive Service, Inc.
LOS ANGELES—Wheel Industries, Inc.
LOUISVILLE—Auto Wheel & Rim Service
MEMPHIS—Beller Wheel, Brake & Supply Co.
MILWAUKEE—Stone Manufacturing Co.
MOLINE—Mutual Wheel Co.
NASHVILLE—Beller Wheel, Brake & Supply Co.
NEWARK—Automotive Safety Inc.
NEW HAVEN—Connecticut Wheel & Rim Co.
NEW ORLEANS—Southern Wheel & Rim Co.
NEW YORK—Wheels, Incorporated
OKLAHOMA CITY—Southwest Wheel, Inc.
OMAHA—Morgan Wheel & Equipment Co., Inc.
PEORIA—Peoria Wheel & Rim Co.
PHILADELPHIA—Thomas Wheel & Rim Co., Inc.
PITTSBURGH—Wheel & Rim Sales Co.
PORTLAND—Six Robblees', Inc.
PROVIDENCE—New England Wheel & Rim Company
RALEIGH—Carolina Rim & Wheel Co.
RICHMOND—Dixie Wheel Co., Inc.
ROCHESTER—Frey, the Wheelman, Inc.
SALT LAKE CITY—Henderson Rim & Wheel Service
SAN ANTONIO—Southwest Wheel & Equipment
SAN FRANCISCO—Wheel Industries, Inc.
SEATTLE—Six Robblees', Inc.
SOUTH BEND—Wire & Disc Wheel Sales & Service
SPOKANE—Bearing & Rim Supply Co.
SPRINGFIELD, ILL.—Illinois Wheel & Brake Co.
SPRINGFIELD, MO.—Borbein, Young & Co.
ST. LOUIS—Borbein, Young & Co.
ST. PAUL—Wheel Service Co.
SYRACUSE—Colbourn Wheel & Rim Service, Inc.
TACOMA—Six Robblees', Inc.
TOLEDO—Wheel & Rim Sales Co.
WICHITA—Borbein, Young & Co.
WINSTON-SALEM—United-Automotive Service

EXPORT

CLEVELAND—C. O. Brandes, Inc.

CANADA

CALGARY—Fisk Tire Service Ltd.
EDMONTON—Alberta Wheel Distributors, Ltd.
MONTREAL—Auto Wheels & Supplies, Ltd.
TORONTO—Wheel & Rim Co. of Canada, Ltd.
VANCOUVER—Wheels & Equipment, Ltd.
WINNIPEG—Ft. Garry Tire Service Ltd.



TIMES (AND TIRES) HAVE CHANGED!



*Specify and standardize
on Budd Wheels*

Wheels and tires were just one step from the wagon—when Garrett Freightlines bought their first truck shown above.

Since that day in 1913, Garrett has expanded to 753 pieces of equipment like the tractor-trailer unit illustrated. With an operation like this it is vital that they get the last mile out of every tire. So they called in Henderson Rim & Wheel Service—Budd distributor in Salt Lake City.

"That's why," says Dick Anderson, supervisor of tire service for Garrett, "we now have 6,000 Budd wheels in operation. With new Budd wheels, using wide base rims and five-degree tapered bead seats, we get original tread mileage in excess of 100,000 miles and still have well-preserved beads free from chafing and cord fatigue. That means extra savings because more tires are re-cappable."

Garrett insists that all new trucks or trailers and tractors be equipped with Budd wheels with wide base rims and tapered bead seats.

You may find considerable savings in *your own* operation by consulting your local Budd wheel distributor listed at the left.

Do it today!

The Budd Company, Detroit 14.

Voltage Regulation

Continued from Page 162

teries of different makes and on batteries prepared by widely different processes. Batteries other than lead-acid types may be found to require settings outside the limits published for lead-acid batteries in order to reach full charge, and so on. Such information is extremely valuable if obtained early in the service life of the battery (or batteries) as it allows the necessary

voltage adjustments to be made before damage is done.

Bus companies and other commercial users have been quick to see the value of "tailored" voltage settings when the need is explained. Many have set up elaborate record systems to maintain a regular check on every battery in the fleet so that charging troubles can be noted early and corrected. Watering of the batteries is done by a responsible electrician rather than by the handyman. The results of such programs are amazing from the standpoint of added battery life and reduced electrical

trouble. The battery record system is especially helpful in diagnosing battery conditions on applications using two batteries in parallel. On these applications water usage records quickly indicate a lack of electrical balance between the two batteries and allow the operator to take the necessary steps to avoid an early failure.

On applications where extreme heat is encountered, the battery may show serious overcharging even at fairly low regulator settings. The reason is that the battery's counter voltage or ability to fight back is greatly reduced as it heats up.

When in this condition the battery is unable to reduce the charging rate to a safe value and thus continues to get even hotter. This condition normally indicates the need for a still lower setting of the voltage regulator or better ventilation of the battery (or both). It is usually better to reduce the voltage setting first to correct overheating as this is often all that is required. If a minimum setting does not prevent overheating, then battery ventilation should be checked.

When reducing the voltage regulator setting to prevent overcharging of the battery, care must be taken that the setting is not reduced below a safe limit from a mechanical standpoint. Minimum settings have been established as 6.9 volts on a 6-volt system or 13.8 volts on a 12-volt system. Whenever a minimum voltage regulator setting is adopted, the cutout relay setting also

(TURN TO PAGE 166, PLEASE)

cheap brake fluids are expensive

Consider your reputation! Consider the safety of your customer! You never save money on cheap brake fluids. So, why take a chance when you can standardize with EIS. Come-backs are costly. It **COULD** make the difference in your next cylinder job!!!

EIS BRAKE FLUIDS meet or exceed SAE specifications. EIS BRAKE FLUIDS work perfectly under any climatic condition — and they mix with all top-quality fluids.

SUPER "40" (moderate) is recommended for all light-duty passenger cars only. (See "DON'T" Below)

SUPER "50" (heavy duty) is recommended for all passenger cars, Trucks, Buses, Tractors and Taxis.

EIS AUTOMOTIVE CORP.
Middletown, Conn.



DON'T
Master Cylinders on Ford Products (1952) are installed under hood — "GET QUITE HOT!" The Highest Boiling Fluid is none too good. You should use "Super 50" only; protect the job and your reputation. Factory recommends it also.

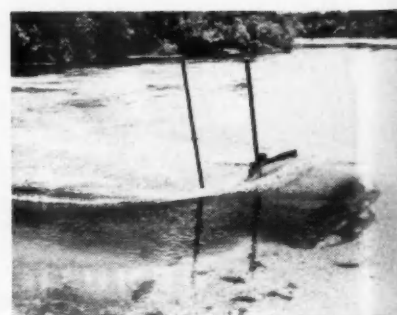
**"ECONOMIZE"
WITH**

NOW AVAILABLE...
New Merchandisers
New Valves
New Kits

Ask your Jobber or
Write us direct



Truckin' the Swimmin' Hole



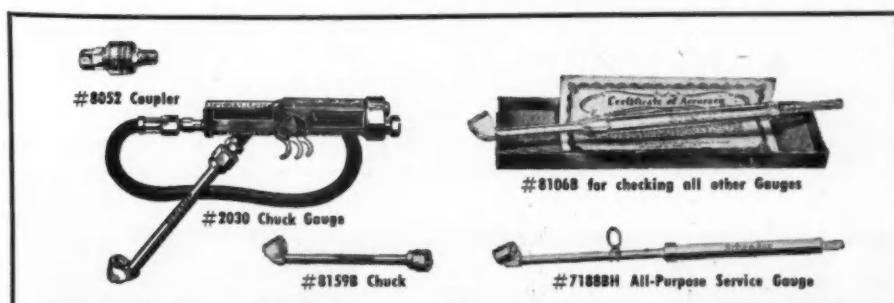
Going on a deep-fording operation is this new GMC 6x6 military truck, the M-135, with snorkel tubes jutting out of the water at Rainbow Springs, Fla. An Army driver from Fort Benning, Ga., equipped with diving mask for deep going, ran the new "Army Workhorse" completely under water while towing a 5000-lb cannon, plunged through dense Florida jungle and otherwise demonstrated the great versatility of this tactical vehicle. It has Hydra-Matic drive with eight speeds forward and two in reverse, and is being manufactured by the GMC Truck and Coach Division of Pontiac, Mich.

Here's where delay can mean disaster!

Fleets of public utility trucks *must* be in shape to go—and go quickly. That's another reason why tire maintenance is a *must*. Whether your fleet services cables or delivers freight—proper tire maintenance is your big step to avoid stalled loads due to flat tires.

**Tire maintenance is easier,
better with Schrader Products**
Start by certifying *all* your gauging

equipment with Schrader 8106B Trutest Special Gauges. Keep airlines working properly with Schrader Air Chucks, Couplers, Chuck Gauges and Accessories. Then too, there's the handy, accurate 7188BH all-purpose service gauge for all your tire inspection. Don't let flat tires catch you on the road and pull your profits down. Is your air service equipment up-to-date? Order quality Schrader Products from your supplier now!



Schrader

REG. U. S. PAT. OFF.

FIRST NAME IN TIRE VALVES

FOR ORIGINAL EQUIPMENT AND REPLACEMENT

A. SCHRADER'S SON

Division of Scovill Manufacturing Company, Incorporated
470 Vanderbilt Avenue, Brooklyn 17, N. Y.

Voltage Regulation

Continued from Page 164

must be reduced so that it will operate at least 0.5 of a volt below the voltage regulator setting.

If a battery continues to overcharge seriously after adequate ventilation has been provided and the voltage setting has been reduced, it is likely that the battery already has been permanently damaged by continued overheating

and/or overcharging. In such a case, of course, the only remedy is a new battery.

Minimum voltage regulator settings may also be required for vehicles driven continuously at high speeds with moderate electrical loads. This classification would include, for example, traveling salesman's cars, cross-country buses, and some trucks. Here the problem is one of holding the final or "taper" charge rate down to a value which will not seriously harm the battery. The number of miles driven is more than enough to keep the battery fully

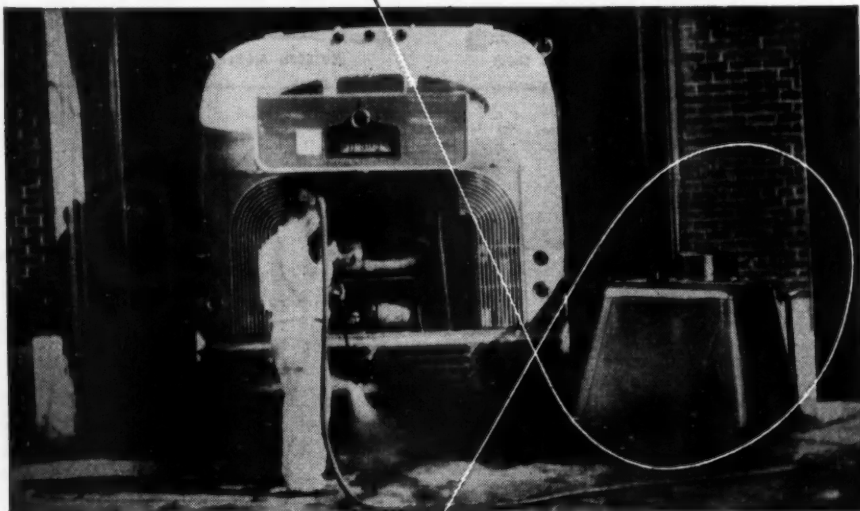
charged and overcharging is a constant threat.

At the opposite end of the scale are the vehicles which are driven too little, too slowly, or which encounter low battery temperatures regularly. When a battery is cooled its counter voltage increases rapidly. In extreme cases the generator may be able to put little or no charging current into the battery at normal regulator settings. Batteries in these units suffer continuously from undercharging and are chronic sources of trouble. Mild cases of undercharging often can be cured by higher voltage regulator settings, but severe and persistent undercharging requires periodic recharging from an outside source. In very severe climates it is a good idea to connect a trickle charger to the battery at night to keep the battery warm enough to accept charge. Applications in which persistent undercharging most often occurs are infrequently used private cars, delivery trucks, and some types of buses. In addition, almost any vehicle not equipped with a special charge-at-idle generator will give trouble if driven slowly and continuously, as in very heavy traffic.

END

Please Resume Reading Page 66

- reduce shop time . . .
- cut maintenance costs . . .
- add to your profits . . .



with
Hypressure **Jenny** steam cleaner

Figures from hundreds of fleet maintenance shops show that when equipment is cleaned with Hypressure Jenny *before* repairs or servicing, mechanics can do their job in just about half the time. With Hypressure Jenny you'll profit not only in labor saved in removing grease and dirt from motors, chassis, parts, etc., but also in road time gained, for you'll get

your vehicles back on the road . . . and earning . . . nearly twice as fast! You can increase your profits still further by using Jenny to clean tools, lifts, pits, driveways, windows, etc., 10 times faster than by hand cleaning methods.

Hypressure Jenny is safe and economical; and ordinary labor can operate it.

Write today for Free Booklet "1001 Ways to Extra Profits." No obligation.

HYPRESSURE JENNY DIVISION

HOMESTEAD VALVE MANUFACTURING CO.

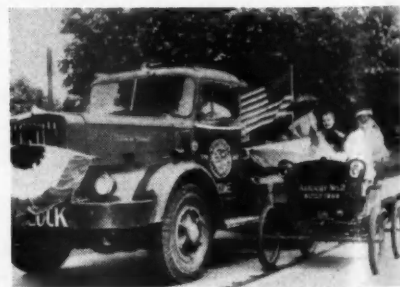
Serving since 1932

P. O. BOX 90 CORAOPOLIS, PA.

Green Windshields Coming

Green-tinted glass will be made available in all International truck cabs and panel trucks. The tinted glass, called Solex Duplate, a product of Pittsburgh Plate Glass Co., will be standard equipment on the new short-dimension Roadliner models. It will be optional at extra cost in all other models.

Husky Grandchild



When Pottstown celebrated its 200th anniversary recently, two Autocars built 54 years apart, met for the first time in parade through the Pennsylvania town. At right is the second vehicle made by The Autocar Co., a phaeton with left-hand drive, a bold innovation in 1898. It was the oldest automobile in the parade and in a meeting of the Antique Automobile Club of America held in conjunction with the Pottstown bicentennial. Driving it is G. Ralph Strohl, assistant chief engineer of the Autocar Co., Ardmore

COMMERCIAL CAR JOURNAL, August, 1952

KOLD-HOLD

truck refrigeration
increases sales,
reduces spoilage
...at lower cost



The cost of "Hold-Over" Truck Refrigeration is so little that its advantages outweigh its cost . . . and it pays for itself in a hurry. It increases sales, reduces spoilage, permits longer runs and saves handling time . . . It does all this for less than the cost of ice alone.

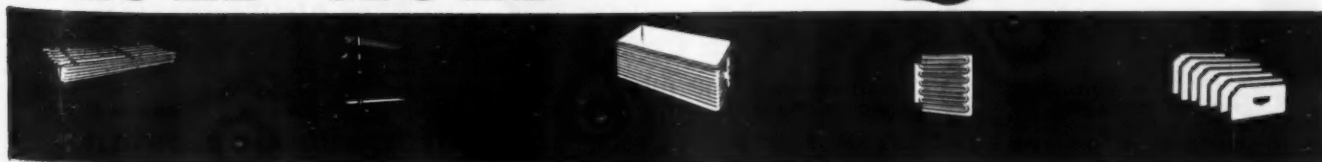
Kold-Hold "Hold-Over" Truck Refrigeration increases sales because it keeps your truck contents cold, clean, dry and odorless, and improves their sales appeal. It reduces spoilage because the temperature of the truck can be predetermined and maintained throughout the longest day's hauls. And when the truck returns from its trip, undelivered loads can be left in the truck to save overtime handling.

"Hold-Over" Truck Plates reduce the cost of marketing perishable foods. Operating either off the existing plant cooling system or with condensing unit mounted on truck, they protect your products in transit . . . for less than 10 cents a day!

So why pay a premium for inadequate refrigeration when you can refrigerate your trucks at a profit, using "Hold-Over" Truck Plates. *Write for full details today.*

KOLD-HOLD

protects every step of the way



New Product Descriptions

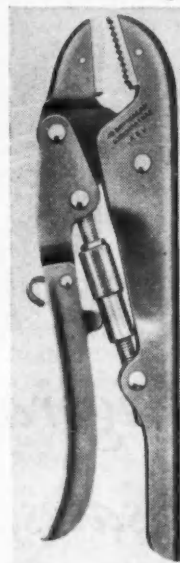
Continued from Page 75

P72. Chrome Repair

A cold plating process for replating rusted chrome and metal surfaces without parts removal has been developed by the R. M. Hollingshead Corp., Camden, N. J. The process is not a paint or a paint-base product but a metal in

paste form, the maker states. It may be diluted with a prepared solvent and brushed or sprayed on the rusted area. The smoothness and brilliance of finished chrome may be obtained by buffing the surface with ordinary red jewelers' rouge, according to the manufacturer.

P73. Clamp Pliers

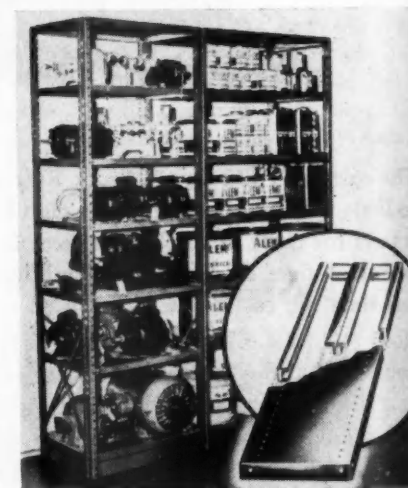


A new release for vise pliers has been featured in a new tool marketed by H. R. Basford Co., San Francisco, Calif. The new pliers, known as "Gripso Trigger-Matic," incorporate a trigger grip release. A new grip device on the jaws has been designed to hold flat pieces of work in a constant plane, preventing side-slipping or twist. A copper-plated model of

the "Gripso Trigger-Matic" is available for welders, to prevent welding splatter from sticking or pitting the tool.

P74. Heavy-Duty Shelves

This sectional steel shelving will support 2 ton on each shelf. Specially reinforced sides and center of the shelves are equipped with 1 in. square high carbon angle irons $\frac{1}{8}$ in. thick. The front and rear have U-shaped reinforce-



ing channels which give direct strength. The assembly stud is larger and fits the uprights in a keyhole-type pattern, eliminating all nuts and bolts in assembling the shelf unit. Dividers, drawers, backs and side panels are available in all sizes for the heavy-duty setup. Equipto Division of the Aurora Equipment Co., Aurora, Ill.

P75. Air Compressors

Three models of portable air compressors have been added to the standard line made by Ingersoll-Rand, Phillipsburg, N. J. The units are used
(TURN TO PAGE 173. PLEASE)

Where
on-the-nose
Accuracy
Counts

Truck Tire Life Depends on Accurate Inflation

The slightest error in inflation pressure can reduce fleet tire life as much as 15%—inaccurate gauges can rob you of one-out-of-six tires. And proper inflation reduces accident hazards, too.

There can be no question—you get on-the-nose accuracy when you use an Eco Tirelator. Simply set the dial to the required pressure (range 5 to 110 lbs.), and apply the chuck—tires are quickly and automatically brought to exact pressure.

Various models are available—all meet Grade A testing specifications of the American Standards Association.

Write for full information

JOHN WOOD COMPANY
BENNETT PUMP DIVISION
MUSKEGON, MICHIGAN

**CHECK
THESE FEATURES
OF THE
NEW 55 AMP. G.R.C.
AMERICAN BOSCH
SPECIAL SERVICE
GENERATOR**

- ✓ SMALL SIZE—LOW COST—BIG 55 AMP. OUTPUT — ONLY 2 UNITS
- ✓ LOW CUT-IN SPEED—FAST INCREASE IN CHARGING RATE
- ✓ 20 AMPS. AT IDLE — FULL 55 AMP. OUTPUT AT 15 mph.
- ✓ REQUIRES LITTLE DRIVING POWER — TOP SPEED OF VEHICLE UNIMPAIRED
- ✓ DYNAMICALLY BALANCED, HAND WOUND, HIGH-SPEED ARMATURE. WINDINGS ARE STEEL BOUND TO WITHSTAND HIGH OPERATING SPEEDS
- ✓ AMPLE 3 1/4" PULLEY, GENEROUS ARC FOR BELT DRIVE, GOOD GRIPPING SURFACE ASSURE TROUBLE-FREE BELT LIFE
- ✓ EASY TO INSTALL — COMPLETE SIMPLIFICATION IN SERVICING
- ✓ PRECISE VOLTAGE CONTROL WITH 2-STAGE REGULATOR



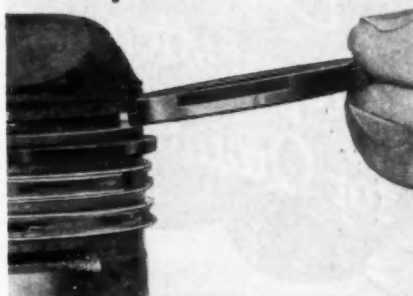
New Products

Continued from Page 168

for construction and heavy-duty work where a high volume of compressed air is needed. The new models are two-stage, oil-cooled, rotary sliding vane compressors that claim major benefits in simplicity, low cost of operation and maintenance, smaller dimensions, reduced weight and cooler discharge temperatures. They are powered by gasoline or diesel units and will produce 315, 210 and 105 cfm respectively.

P76. Wear Gage

A feeler gage to determine piston ring wear and to expedite proper fitting of the new ring has been introduced. The gage is circular, but beveled in four places, machined to the



exact thickness indicated on the tool. It will indicate whether the ring should be regrooved or replaced. If the proper gage surface will not enter the piston groove, the indication is that the ring is within allowable limits. The "Top Wear Gage" is available from Perfect Circle Corp., Hagerstown, Ind.

P77. Spring Booster

This is an "Air-Lift." It is a combination shock absorber, stabilizer and booster spring that may be installed within a coil spring where there is no center shock absorber or clamped to a leaf spring regardless of the type of



suspension. It consists of a steel housing spring and a Butyl rubber insert which is filled with air at a standard tire-service outlet. The units may be used on passenger cars and light trucks. They are manufactured by Armstrong Rubber Co. for Air-Lift Corp., Lansing, Mich.

(TURN TO NEXT PAGE, PLEASE)

**"This one clamp
saves a dozen trips
to the stockroom"**



"Aero-Seal" WORM DRIVE HOSE CLAMPS

No need for a trip to the stockroom for a clamp to tighten a leaky hose. Overhaul after overhaul, season after season, the mechanic simply replaces the worn hose and re-uses the same Aero-Seal Hose Clamp.



WON'T CRIMP — CAN'T LEAK

Worm drive applies even pressure all round the hose. Smooth saddle prevents cutting. No crimping — Aero-Seal can be replaced in any position. Three threads of worm always engage deep into slots of stainless steel band...hold hose tight over a million miles of roads!

REPLACE ANYWHERE — ANY TIME



A man can install an Aero-Seal any place he can reach with thumb and finger. Integral construction — no parts to lose. Self-feeding when worm engages band. Screw-driver slot or thumb grip screw styles. Tighten with a twist of the wrist.

Use of stainless steel subject to government regulations.



BREEZE CORPORATIONS, INC.
41 South Sixth St., Newark, N. J.

New Products

Continued from Page 173

P78. New Type Oil

Detergent oil with new specifications has been marketed by Socony-Vacuum Oil Co.

P79. Oil Pumps

New models of automatic transmission oil pumps, each designed with the Alemite-engineered filter in the nozzle

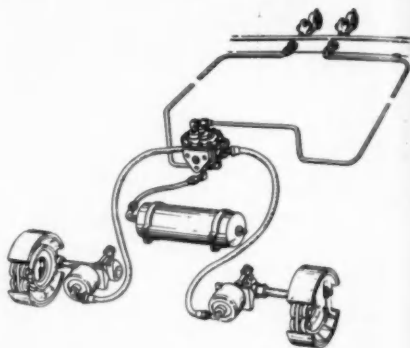
at the point of delivery, have been announced by the Alemite Division of Stewart-Warner Corp., Chicago.

Model 7076 features volume delivery through a meter which registers in quarts. The seven-foot hose with six-inch knurled handle, is equipped with a flexible extension nozzle. Protection against drippage is guaranteed by the positive manual shut-off, another feature of these models. An air eliminator assures accurate delivery regardless of the level of the fluid in the container. This model is equipped with a white enamel cover for the drum. The

container is moved into position for use on a rugged dolly fitted with four large Bassick casters.

P80. Emergency Valve

The new Wagner relay quick-release, emergency valve is a combination unit which performs three functions. As a relay unit, it acts in unison with the driver-controlled tractor application valve, automatically metering air pressure from the trailer reservoir to speed



trailer break application. As a quick-release unit, its action speeds the trailer brake release and as an emergency unit it automatically applies the trailer brakes if there is an abnormal drop in the air pressure, such as would occur in the event of a breakaway. The valve may be used on single or tandem trailers. Automotive Division, Wagner Electric Corp., St. Louis, Mo.

P81. Injector Puller

A tool has been developed for removing fuel injection nozzles from the cylinder head on all International



Harvester diesel engines. It exerts a straight pull, is adjustable, and may be used for other pulling jobs as well. Owatonna Tool Co., Owatonna, Minn.

P82. Anchor Bolts

Single and double anchor bolts have been introduced by Super-Grip Bolt Co., Inc., Philadelphia. They are in-

(TURN TO PAGE 176, PLEASE)



use only
**FACTORY NEW
GENUINE
BENDIX DRIVES
and
PARTS!**

It's easy to build a reputation for quality if you use only genuine parts in your repair work. For example, when you service Bendix* Drives be sure to use only *factory new* Bendix Drives and Parts. This means your customers will get the same dependable performance that is built into every original Bendix Drive—performance proven by over 85,000,000 installations. Insist on *factory new* Bendix Drives and Parts when you order from your distributor.

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Bendix Drive

ECLIPSE MACHINE DIVISION of
ELMIRA, NEW YORK

Export Sales: Bendix International Division, 72 Fifth Ave., New York 11, New York



You'd grin, too

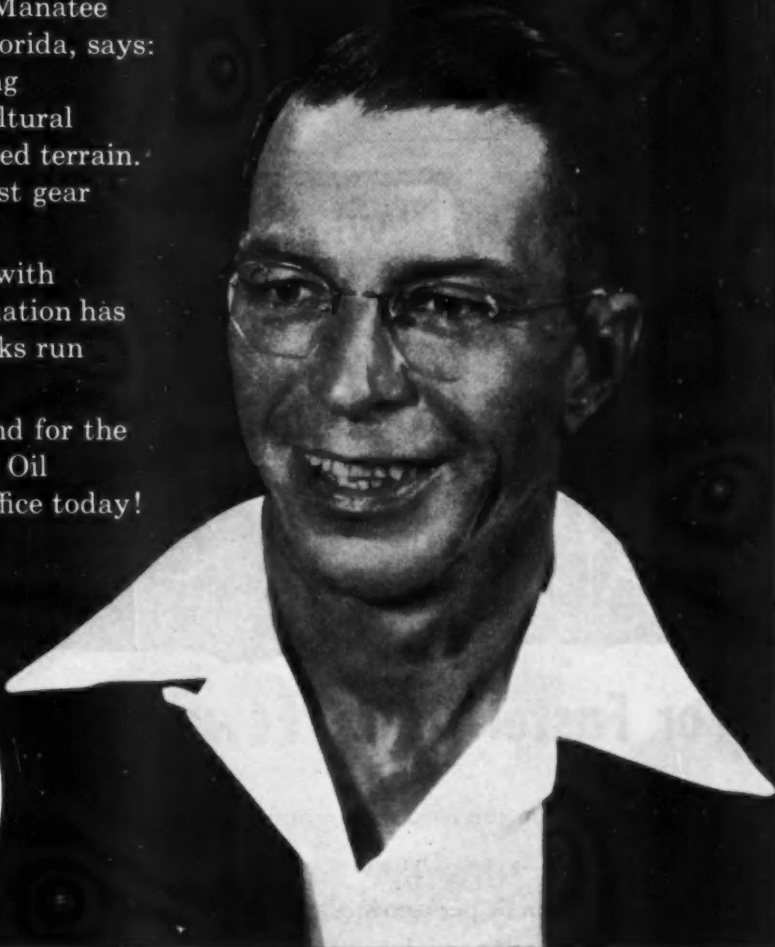
—if your lubrication enabled your trucks to give the service Jim Minton's do.

Mr. Minton, General Manager, Manatee Dolomite Company, Samoset, Florida, says:

"Our trucks take a terrific beating transporting and applying agricultural limestone over rough, newly cleared terrain. Much of their work is done in first gear and low axle with open throttle.

"Since we started in lubricating with Purol H.D. motor oil, sludge formation has been eliminated, and all our trucks run longer between oil changes."

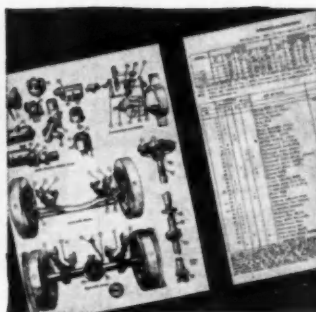
You can grin like Mr. Minton, and for the same reasons. Just see your Pure Oil salesman, or call your Pure Oil office today!



How the Pure Oil Plan for Fleet Operators helps you cut cost per mile!



1. Expert "trouble shooting."
A free Pure-Sure Analysis of your used motor oil will reveal the causes of operating difficulties, and the best ways to improve engine efficiency.



2. Exact, correct lubrication.
Pure Oil's "individualized" lubrication guide charts for your specific equipment will insure correct, effective lubrication at every point of wear.



3. Effective preventive maintenance. Pure Oil's new, practical preventive maintenance service records will help you streamline your program and make it much more efficient.



4. Cost-cutting lubricants for every fleet use... and priced right for fleet use, too. Purol Heavy-Duty Motor Oil meets and exceeds the requirements of MIL-O-2104 specifications.

THE PURE OIL COMPANY • General Offices: 35 E. Wacker Drive, Chicago 1, Illinois

COMMERCIAL CAR JOURNAL, August, 1952

New Products

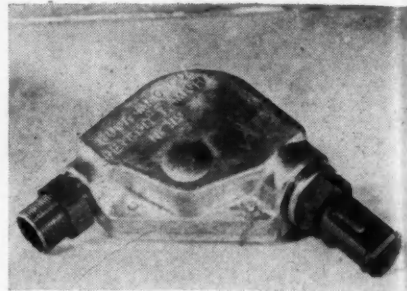
Continued from Page 174

stalled in the usual way, but a lead sleeve is mushroomed by a tamping tool before the bolt is turned down. The repeated blows then flatten the steel anchor, driving its ribbed edges into the walls of the hole. The bolt may be used in masonry, brickwork, wood, etc., at any angle, and that the bolt may be bent off without disturbing the anchorage. They are available from

3/16 in. to 1/2 in. diameter and up to 5 in. long. A tamping tool comes free with every 100 assemblies.

P83. Riveting Adapter

A new angle adapter has been announced by Huck Mfg. Co., Detroit, which expands the scope of blind riveting to many additional maintenance applications. The angle adapter is used in conjunction with the Huck hand riveting or air riveting tool. It makes the hard-to-reach corners readily accessible, the manufacturer states. One



person from one side of the work can drive self-plugging or pull-through blind rivets in a clearance space of four inches from the nose of the riveting tool, with the adapter.

P84. Hoists and Bodies

A medium duty group of hoists and bodies for trucks of 1 1/2 to 2 1/2-ton rated capacity have been added to the line manufacturer by Convento Mfg. Co., Cambridge City, Ind. At present, Convento makes two styles of hoists.



There is a double-arm type hoist, used for extreme loads, while a direct hoist is used for average loads. Both hoists elevate the truck body to a full 60-deg dumping angle. The body itself is 6 1/2 ft wide while the usual width is limited generally to 6 ft. The body has a reinforced 8-gage steel floor.

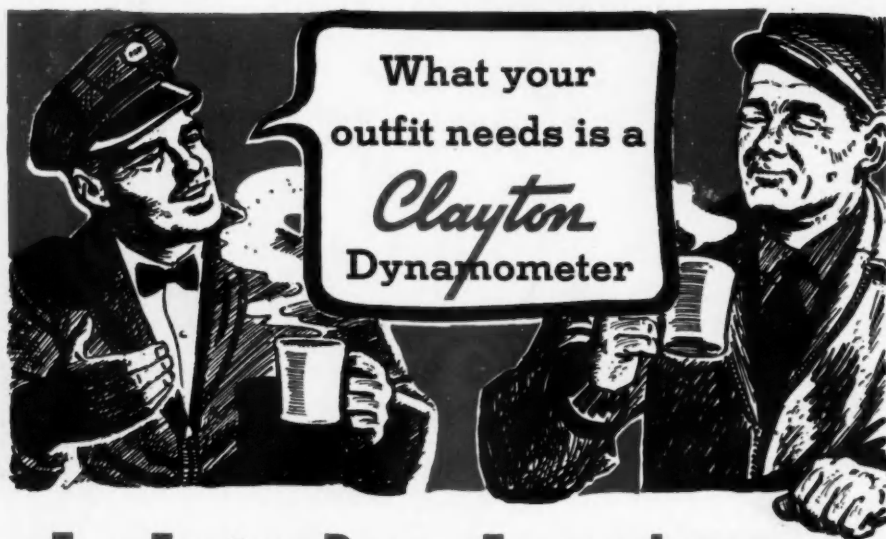
P85. Turn Signals



A series of class B turn signals for smaller trucks has been announced by K-D Lamp Co., Cincinnati, Ohio. Two units, KD 757 and 758 are identical with the exception that the former has a single red or amber lens. The 758 has a double face, amber and red, with a lead wire through the hollow mounting stud for attachment to the fender. The line also includes the flush-mounting Model 759 with red or

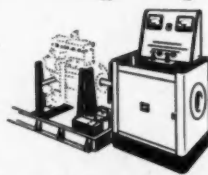
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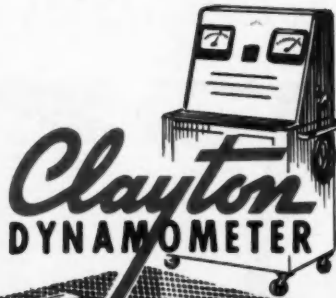


For Faster Runs; Fewer Lay-ups

Payload hours on the road make profits. Only with the Clayton Dynamometer can you insure peak performance through proper adjustment and inspection of fleet units operating under actual road driving conditions in your shop. Mail the coupon to learn how and why, year after year, winners of fleet maintenance awards are those operators who use the Clayton Chassis Dynamometer.



Clayton engine dynamometers allow engine run-ins before remounting in vehicle.



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Packard

ENGINE-COMPARTMENT CABLE

Electric wiring in bus and truck engine compartments has some deadly enemies—heat, fuel vapors, moisture. That's why cable life is usually relatively short.

But wise operators know there is a safe and certain answer—Packard Engine-Compartment Lighting Cable. It is the cable that is scientifically designed to withstand these enemies of cable life. A special glass-braid sheath between two layers of Packard synthetic insulation makes it extra tough for extra tough operation.

CAN REALLY TAKE IT



RESULTS:
Packard Engine—Compartment Cable

BEATS: { High Heat
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Cleaning Compounds
Live Steam

For more reliable performance, lower maintenance costs, and less "down time," standardize on Packard Engine-Compartment Cable—first choice of many leading truck and bus manufacturers for original installation. See your nearest Packard jobber.

Packard

Packard Electric Division, General Motors Corporation
Warren, Ohio



FOREMOST BUILDER OF AUTOMOTIVE AND AVIATION WIRING

COMMERCIAL CAR JOURNAL, August, 1952

New Products

Continued from Page 176

amber lens. There is a flashing indicator available for use on all of the above. The complete set for a truck comes with a three-wire, fused circuit, with the control switch.

P86. Safety Lantern

A red flashing lantern has been introduced for use in all Class 1, Group D hazardous locations as well as other spots requiring a warning or marking

light. It is portable, battery-powered, with a wide red lens and a sliding switch for selecting a steady beam or a flashing light. It has a "kick-out" bulb socket to prevent explosions when a bulb is broken and spark insulation on protruding metal parts. The lamp has been tested for 52 hours of continuous blinking on a single battery. It is listed as Model 2146-S by Justrite Mfg. Co., Chicago.

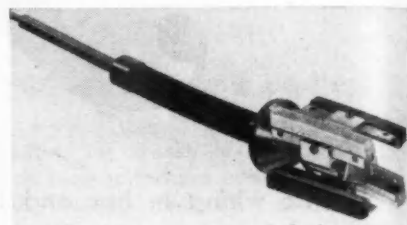
P87. Small Dynamometer

A compact chassis dynamometer has been added to the line made by Clayton

Mfg. Co., El Monte, Calif., suitable for small shop operations on passenger cars and light delivery-type trucks. It is a top-floor unit that will transmit horsepower and speed readings to two open-faced dials mounted on a cabinet that provides space for a gas analyzer, vacuum gage and other diagnostic instruments.

P88. Cylinder Hone

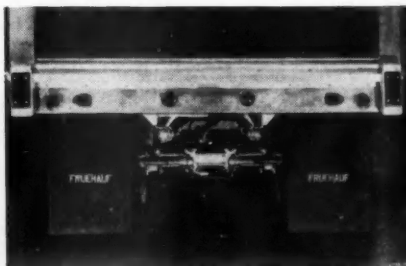
A new type cylinder deglazer with a flexible drive has been introduced by



Hastings Mfg. Co., Hastings, Mich. The flexible shaft was developed to give ready access to rear cylinders and better the shop time. The expansion cone adjusts from 3 in. to 3 7/8 in. diameter. Complete deglazing with the new tool may now be done in less than five minutes for the entire cylinder block, the manufacturer states.

P89. Mud Flaps

The Fruehauf Trailer Co. is marketing a new splash guard or mud flap. The flaps are made of chopped tire cord fabric. A mesh wire screen is



bonded between two layers of the fabric to prevent tearing or ripping. A reinforcement at the top and bottom aids rigidity. Air holes are provided to aid in keeping the flap hanging even at high speeds.

P90. Rear View Mirror

A prismatic tilt-type rear view mirror, developed by Pittsburgh Plate Glass Co. in cooperation with the Standard Mirror Co. is now available. Manufactured by Standard, the mirror operates with a flip motion, bringing into focus a secondary or "ghost" image which removes the stinging glare of

(TURN TO PAGE 180, PLEASE)



Millions of reasons why Federal bearings are your best bet for replacement...

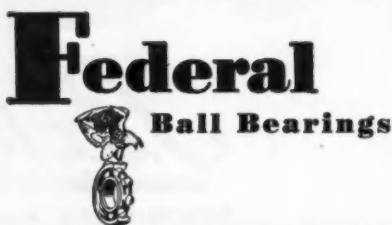
On that next bearing job, replace with Federal Ball Bearings—it's the sure way to end comeback and lost time charges.

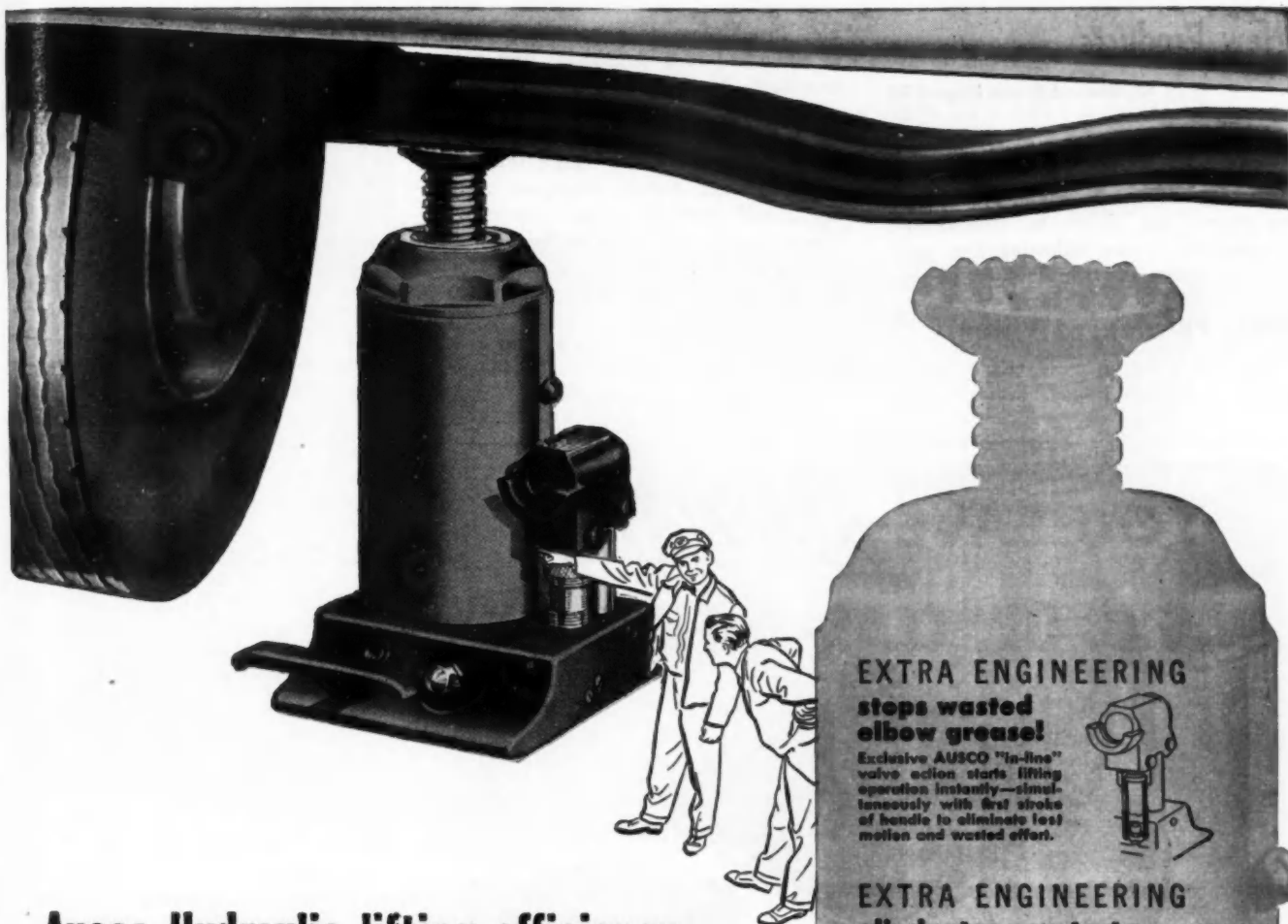
Federal guarantees that. Ever since the hand crank, Federal bearings have been *original equipment*. Now, millions of vehicles roll on Federal Ball Bearings. That's why you know that Federal bearings *have* to be good. Play it safe—on that next job ask your jobber for Federal Ball Bearings, the most complete line of ball bearings for the automotive industry.

The Federal Bearings Co., Inc., Poughkeepsie, N. Y.



JOBBER: Will you be ready to fill orders? Thousands of others are. Call your NAPA warehouse, ask about the new Federal Master Interchange book which makes it possible for you to handle the tough-to-fill orders from the complete Federal line. Better call now.





Ausco Hydraulic lifting efficiency is more than skin-deep...

it stems from **EXTRA ENGINEERING FEATURES** through-and-through. As you know, merely looking at the outside of a hydraulic jack won't tell you if it is heavy-duty caliber through-and-through. Ausco, with 25 years of hydraulic engineering experience, KNOWS that it takes **EXTRA ENGINEERING FEATURES** on the *inside* to make a jack as tough and rugged as it looks from the outside. There are over 20 special design features built into the AUSCO Hydraulic Axle Jack to make it easier to operate and less costly to maintain, even under the most strenuous service conditions. Here are some typical examples of the type of **EXTRA ENGINEERING FEATURES** you'll find inside every AUSCO Hydraulic Axle Jack:

AUSCO

hydraulic axle jack

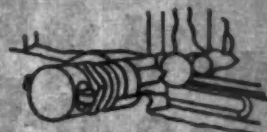
EXTRA ENGINEERING steps wasted elbow grease!

Exclusive AUSCO "in-line" valve action starts lifting operation instantly—simultaneously with first stroke of handle to eliminate lost motion and wasted effort.



EXTRA ENGINEERING eliminates greatest hydraulic operating trouble!

Exclusive AUSCO straight-line oil flow eliminates dirt-trapping pockets; makes it easier to flush pump clean.



EXTRA ENGINEERING means greater lifting strength!

AUSCO Jacks have larger-diameter extension screw, threaded by latest method which produces heavier shank diameter for greater strength and longer service life.



EXTRA ENGINEERING makes it easier to lower the load!

Smooth-operating AUSCO release valve allows easier, smoother lowering at any desired speed. Load is under complete control at all times.



1½, 3, 5, 8, 12 & 20-Ton Capacities

Send for **FREE AUSCO CATALOG**. Write

AUTO SPECIALTIES MFG. CO., ST. JOSEPH, MICH.
for 40 years, one of the world's largest manufacturers of original equipment and replacement hydraulic and mechanical jacks.

B-5952R

COMMERCIAL CAR JOURNAL, August, 1952

179

New Products

Continued from Page 178

headlights approaching from the rear.

The secondary image provided by the prismatic mirror is sufficiently bright to permit the driver to observe the maneuvers of cars following him without eye strain, the manufacturer claims.

P91. Permanent Filter

An oil filtering unit consisting of sized, spherical-shaped bronze parti-

cles fused together where they touch, is embodied in a permanent unit now available. The bronze element provides a porous structure through which the oil passes, removing foreign matter. The manufacturer also claims that the filter will not disturb detergent additives, will provide a flow-rate many times faster than conventional cartridge-type elements, yet requires only an occasional rinse with gasoline to recondition the element. Conversion units are available for trucks and cars that use another type filter. Permanent Filter Corp., Los Angeles, Calif.

P91A. Emergency Chains



In preparation for next winter, a new type single-unit chain has been introduced, with many advantages claimed by the manufacturers. The chain consists of two heavy-duty truck cross chains, hooked to a steel plate. The triangular shaped steel plate has a chain which fastens the unit in place on any type dual or single rims. Bridgeport Chain & Mfg. Co., Bridgeport, Conn., or any of the Round Chain Companies.

P92. Oil Cooler

A combination oil heat exchanger and lube oil clarifier in an integral unit is housed in a fluted casting with a replaceable filter element. The overall measure is 10 in. outside diameter by 30 in. in length. The unit decreases the difference in temperature between the cooling system and crankcase oil by circulating the oil in the housing and cooling it through the fluted surface of the cylinder. The unit may be used on all heavy duty gasoline engines, diesel units, and LP type power units. It does not disturb or filter out oil additives or other detergent properties, the manufacturer claims.

P93. Sleeper-cab Cooler

A water-circulating air cooler has been introduced by Metal Products Engineering, Inc., Los Angeles, Calif., that will operate from the vehicle's electric system. The water capacity is sufficient for six hours of operation. A 12-v d.c. motor drives the blower and recirculates the water. The unit is 28 in. high, 21 in. wide, and 10 in. deep, is mounted by steel brackets inside the cab, and requires a discharge opening 3½ in. by 10 in.

P94. LPG Dispensing Unit

A new dispensing unit for tank trucks carrying liquid petroleum gas has been introduced as Model 760 by Rockwell Mfg. Co., Pittsburgh, Pa. The system includes a piston meter, differential valve, strainer, check valves and service valves. The meter, shown here, is made of bronze, designed for 320 psi working pressure at atmospheric temperatures. It is a two-piston reciprocating type, positive dispensing meter with a flow range from 5 to 30 gal per minute.

(TURN TO PAGE 182, PLEASE)

YOU SAVE *ALL WAYS*
WITH
W.G.B. OIL CLAR-O-FICATION

**Use the W.G.B.
OIL CLAR-O-FIER**

**with the W.G.B.
CLAR-O-FEX
CARTRIDGE**

There's a W. G. B. Clar-O-fier for every type of Oil Filtration—a W. G. B. Clar-O-fex Replacement Cartridge for all popular makes of filters. Write for details and the name of the W. G. B. representative located nearest you.

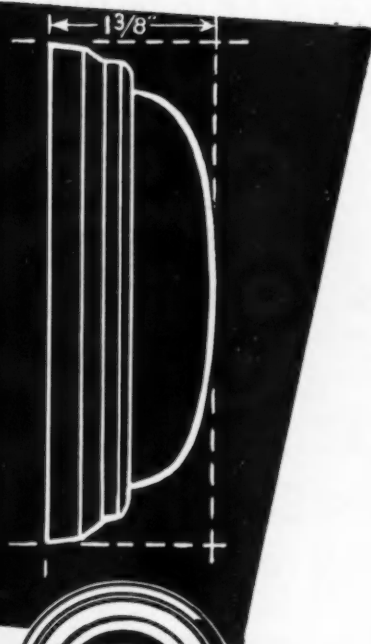
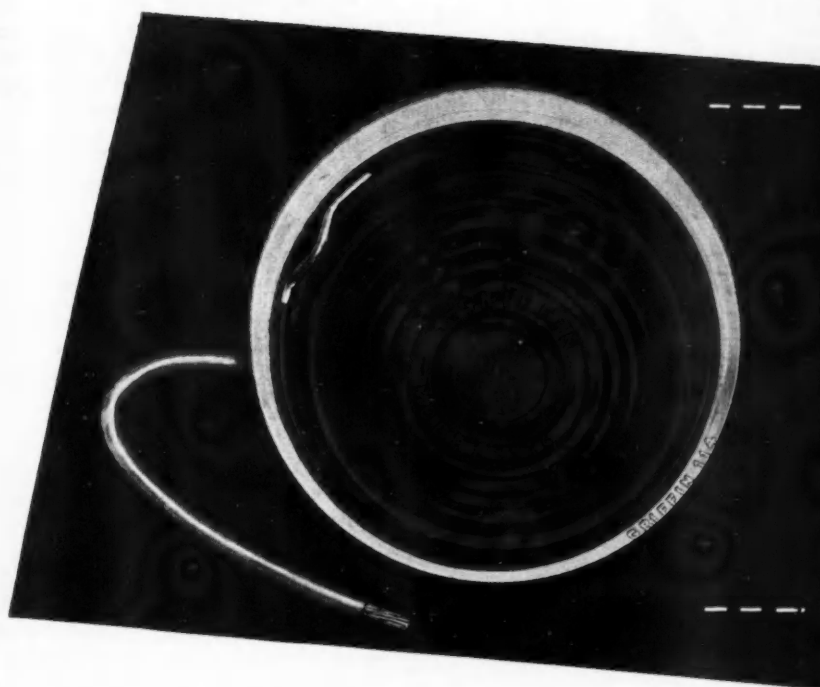
W.G.B. OIL CLARIFIER, INC.
KINGSTON, N. Y.

The W.G.B.
750 Cu. In. Capacity
CLAR-O-FIER

The W.G.B. S-11C
750 Cu. In.
CLAR-O-FEX
CARTRIDGE

IT'S EASY TO SEE...

WHY GRIFFIN LAMPS OUT-LAST ALL OTHERS

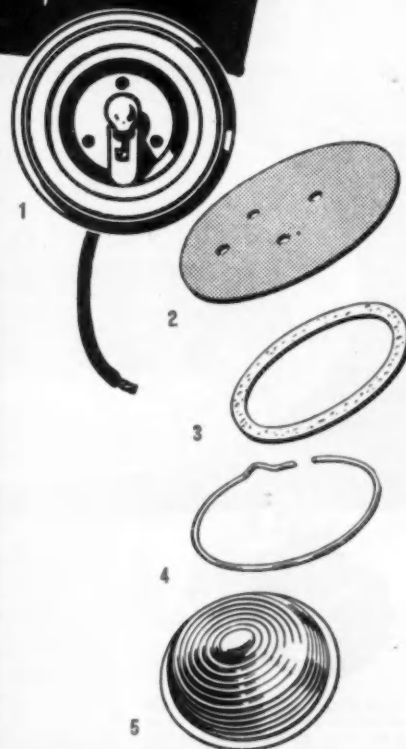


• Griffin engineers concentrate on fleet requirements. They build lamps that last—lamps that give sharp, clear warning signals under all conditions.

The 114 clearance-or-marker lamp is typical of Griffin's all-out policy to perfect fleet safety lighting. It's so flat it hugs inside the rub-rail, sheltered from bumps or blows. The body is one-piece, non-ferrous metal with molded-in connector socket. The lamp is completely corrosion-proof—it can't rust, even on cattle trucks. This eliminates the biggest cause of lamp failure—assures longer, more dependable service under all conditions.

Here's another example of advanced Griffin engineering—another reason why it pays to standardize on the complete line of fleet safety lighting needs.

THE GRIFFIN LAMP COMPANY • HAMILTON, OHIO



1. Body is of non-ferrous metal, cast in one piece with molded-in connector socket. Bulb replacement is simplified. Juggling of parts eliminated.
2. Mounting gasket of heavy sponge rubber cushions shocks, absorbs vibration.
3. Lens gasket of thick cork gives lens additional protection from blows and sideswipes.
4. Heavily cadmium plated spring steel retainer ring holds lens firmly in place.
5. Beacon-type lens provides clear signals from rear, front and side. Available in amber, green, crystal or red.

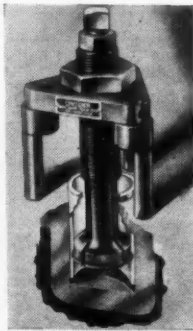


New Products

Continued from Page 180

Extractor Tool

A bushing and bearing extractor for blind holes has been introduced by Crozier Machine Tool Co., Los Angeles, Calif. The product saves as much as 75 per cent of labor time used in extracting bushings, bearings, sleeves, liners, roller bearing cups and races of magnet type bearings, etc., according



to Crozier. The extractor consists of eight threaded expanding arbors, a draw table with two sets of legs, short and long, adjustable as to distance from the work, and can handle any hole from 1/2 in. to 2 in. diameter. A maximum of 2 1/2-in. may be drawn at one setting.

Late Product Flashes

Aluminum paint that bonds itself to metal when it is subjected to 500 deg or more heat is available from Sheffield Bronze Paint Corp., Cleveland, Ohio.

Brake lining that has asbestos fiber and frictional binder material pressed under 300 ton pressure claims to have many advantages over conventional woven linings. Russell Mfg. Co., Middletown, Conn.

Primer for steel and iron products has been developed. It is an iron oxide zinc chromate coating which may be recoated with lacquer or other finish three minutes after application without lifting or crazing. Thompson & Co., Oakmont, Pa.

Combination work tables and tool racks are now offered as optional equipment with the Wales sheet metal fabricator made by Wales-Strippit Corp., North Tonawanda, N. Y.

New fuel pump for Ford cars and trucks has been introduced by Airtex Automotive Division, Fairfield, Ill.

Floor paint that takes the slip out of spilled oil, grease, etc., is now being produced by Oil-Dri Corp. of America, Chicago, Ill. It contains an abrasive material which affords traction on indoor or outdoor surfaces.

Impact wrench, air operated and reversible announced by Independent Pneumatic Tool Co., Aurora, Ill., weighs 5 3/4 lb, is 8 1/2 in. long and is equipped with either a 1/2-in. square drive or a 7/16-hex. chuck.

Fender cover, rubber cushioned, for use by mechanics, has been marketed by Goodyear Tire & Rubber Co., Akron, Ohio.

Stick wax, made from a blend of solid waxes by the Johnson Wax Co., is for metal working, cutting, threading, drilling, etc., where a solid wax is needed.

Locknuts made by Security Locknut Corp., Melrose Park, Ill., have been redesigned and improved.

Conditioning agent for spray booths, developed by Pennsylvania Salt Mfg. Co., prevents adhesion of paint to the curtain wall and assists the water cascade in preventing escape of paint into the atmosphere.

Chrome and metal cleaner now available in larger size shop containers from Arco Co., Cleveland, Ohio.

Plastic mallets and hammers from 1 oz. to 14 oz with head diameters from 3/4 in. to 2 in. are made by Matticks Mfg. Co., Los Angeles, Calif.

Cooling system cleaning machine connects to regular water supply, is attached to filler hole, circulating chemically treated coolant through the system loosening scale, rust, etc. Trippe Mfg. Co., Chicago, Ill.

Toggle bolts with reversible heads called "Super-Grip" by Anchor Bolt Co., Inc., Philadelphia, Pa.

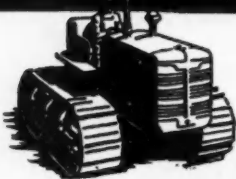
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Please Resume Reading Page 76

COMMERCIAL CAR JOURNAL, August, 1952

Mr. D. Cal.
the PF decal
merchandise, says:

**FLEET-ING
IMPRESSIONS STICK
WITH PF DECALS!**



PF truck decals, especially developed to withstand hardest abuse of wear and weather, give rugged service on railroad cars, planes, farm implements!



**PALM,
FECHTELER & CO.**
220 WEST 42 STREET
NEW YORK 18, NEW YORK

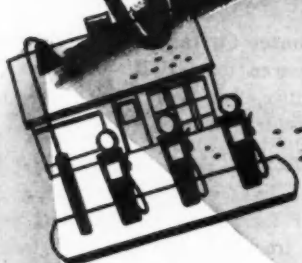
TRUCK and car fleets give double duty with PF decals on sides, doors, windows, and roofs of vehicles! The space is FREE . . . and the circulation is ALL AMERICA! So, get the maximum advertising mileage out of your vehicles with PF truck decals! Send in the coupon below for free booklet, samples, and information about free art and color testing service!

Please send me your FREE BOOKLET, "DECALWAYS TO SALES," free samples, plus information about your free art and color testing service.

Name _____
Firm _____
Address _____
City _____ Zone _____ State _____

CCJ 8

Rewire for Good



Today, with more old cars on the road, a regular checkup of spark plug wires becomes an even more important part of your service.

Rewire for a good job—Rewire for good profits—
Rewire—for GOOD. Use Belden Spark Plug Wire Sets.

Belden Manufacturing Company
4695 W. Van Buren St., Chicago 44, Ill.



BATTERY CABLES
SPARK PLUG WIRE SETS
LIGHTING WIRES
SPARK PLUG WIRES

Belden
Automotive **WIRE**

To You,
Belden's Golden Anniversary Means

—product performance that can come only from a "know-how" that has grown through actual service since the early days of the automotive industry.

—an ability to co-operate in pioneering new wires to meet or anticipate industry's growing needs.

In the years that follow
This Belden Program Is

—TO BE
CONTINUED

MAINTENANCE REPORT



HOW MUCH SPRING TENSION IS LOST When You Grind Valves & Seats?

"EXPERT MAINTENANCE MEN KNOW" . . . says "Pete" Peterson, "that on one engine you lose up to 25% valve spring tension (valve in closed position) when the pressed-in valve seat is lowered as little as 32 thousandths. Loss of spring tension causes broken or burned valves because valve flutters and bounces on a hard, distorted and cocked pressed-in valve seat.

DO YOU KNOW . . . ? That when using *pressed-in seats* (pre-cut 45°) you can't get the correct valve seat height because:

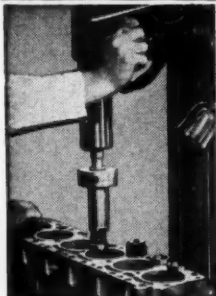
1. The pre-finished valve seat insert drops below block surface when pressed into a deepened counterbore. You necessarily deepen the counterbore when you clean and true it up.
2. *Pressing in* an insert distorts the valve seat which then requires considerable grinding to get it back to round. With excessive grinding you again lower the seat.

Both "truing up" processes set the valve seat lower in the block than called for in original factory specifications . . . the result, decreased spring tension and ultimate valve breakage and burning.

Stays Round—Cools Valve!

Made of tough chrome-nickel-iron, individually cast under pressure. Unlike pressed-in seats, P-B Screw-In Valve Seats retain their original dimensions, won't buckle and come loose, can't tilt and cause hot spots and valve burning, and allow for perfect seating of valve on every stroke.

ONLY THE P-B SCREW-IN VALVE SEAT WITH EXPANSION CLEARANCE



P-B drill press unit for production installation. Also available **HEAVY DUTY PORTABLE** unit for jobs in or out of chassis—up to Diesel locomotives.



Special 8 and 12 fluted CUTTER and TAP makes only precision counterbore in replacement field and machines in expansion clearance between threads.



SCREW-IN SEAT WITH
EXPANSION CLEARANCE

LET'S YOU HOLD FACTORY TOLERANCES ON VALVE SEAT REPLACEMENTS!

1. With P-B seats you can get exactly the right valve seat height even though you deepen the counterbore. P-B seats have an extra 1/16" of material which is easily machined off flush with block. And since the P-B seat is *not* pre-cut, you can grind to factory accuracy.
2. Because you *screw-in* the P-B insert there is absolutely no distortion . . . the seat remains perfectly round.

P-B's exclusive features let you hold factory specifications . . . maintain proper spring tension . . . double your valve mileage.

AMAZING PERFORMANCE

- **SAVES COSTLY BREAKDOWNS**—Eliminates 75% of valve burning, sticking and breakage. The *predetermined* expansion clearance machined in between the threads of the P-B seat also eliminates 75% of valve port cracks due to radial pressure of expanding pressed-in seats. P-B *stress-relieves* this area.
- **REPLACEMENT OF SEATS MANY TIMES—WITHOUT OVER-SIZE**—You can replace P-B seats without damaging the threads in counterbore or going to an oversize.
- **EASY TO REGRIND**—After long service just a light touch with the grinding stone cleans it up because it is not out of round.

CONTACT YOUR MASTER SHOP TODAY!

P-B Master Shops are now located in every major city in the U. S., ready to help you solve your toughest valve maintenance problems. Or write for further information:

Leader for 20 years in head and block valve port welding procedures

PETERSON WELDING LABS., INC.
Dept. C-8 1423 Virginia Kansas City, Mo.

PETERSON-WELDING LABS. is a U. S. and Canada by the Western Valve and Pipe Corp., Portland, Oregon

FLEET NOTES



Bekins Van and Storage Co. has a new furniture repository in Phoenix, Ariz., located on Central Avenue.

Hunter Cartage Co., Streator, Ill., has announced that H. B. Worrell, a Hunter executive, has been named president of the Central Motor Freight Assn.

O'Boyle Tank Lines, Washington, D. C., has awarded safe driving pins to 52 of its drivers for operating intercity tank trucks during the 1951 fiscal year without an accident.

Mason & Dixon Lines, Kingsport, Tenn., has been authorized by the Interstate Commerce Commission to purchase the operating rights and property of two Tennessee Trucking firms for extension through operations between Nashville and Memphis, Tenn. They are the Sartain Truck Line, Memphis, and O'Guin Truck Line, Linden.

Davidson Transfer & Storage Co., Baltimore, Md., held an election recently with the following results: Joseph Davidson, president; B. D. Davidson, vice president; J. I. Davidson, secretary; H. A. Davidson, assistant secretary; David Davidson, treasurer, and H. E. Young, assistant treasurer.

Branch Motor Express Co., New York, has been awarded recognition for its 1951 claim prevention program by the American Trucking Associations' National Freight Claim Council. Branch was one of seven carriers throughout the United States to receive this distinction.

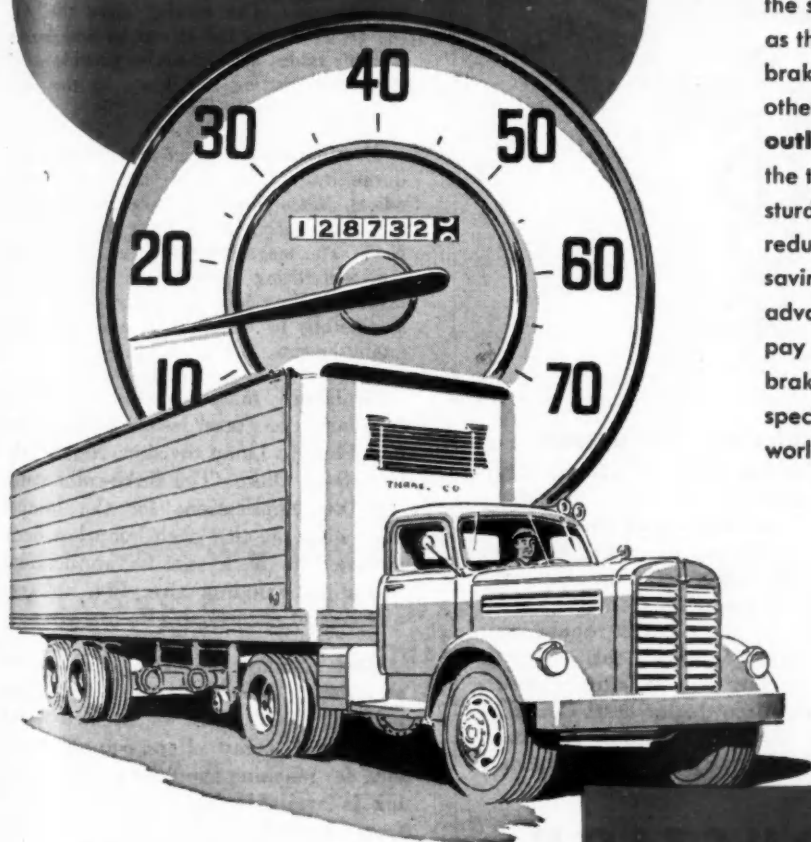
Spector Motor Service, Inc., Chicago, climaxed the system-wide building program with a modern, million-dollar terminal and headquarters building, capable of handling 80 trailer combinations at one time. The terminal covers a 500,000 sq ft area, and has a cargo dock with 72 doors and a spur apron.

Quinn Freight Lines, Inc., Brockton, Mass., has the OK from the Interstate Commerce Commission to purchase the operating rights held by the T. F. Neale Co., Callao, Va., and Ace Truck Lines, Richmond, Va.

**Bendix-
Westinghouse**

THE WORLD'S MOST TRIED
AND TRUSTED

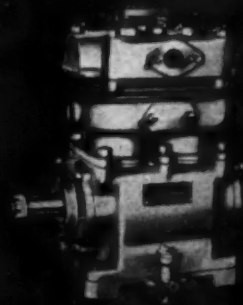
AIR BRAKES



**Engineered to Outlast
Any Other Braking System**

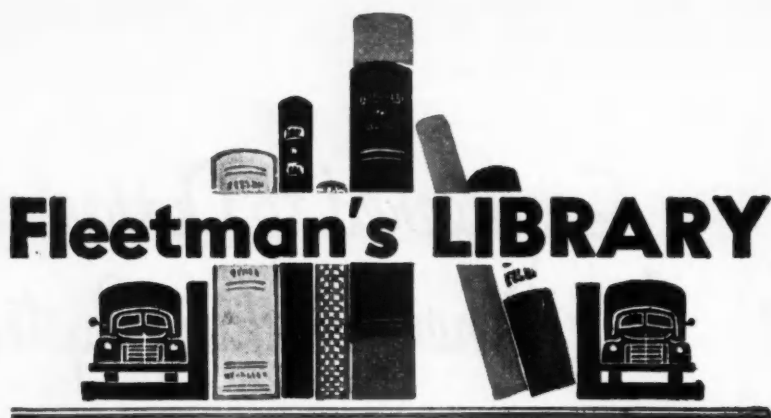
Find out for yourself—ask the owner of any truck equipped with Bendix-Westinghouse Air Brakes and he'll tell you they're a sure guarantee of long years of **reliable performance**. The Bendix-Westinghouse Compressor, for example, is designed and built on the same **proven reciprocating piston principle** as the engines in your trucks. This husky unit, like the brake valves, governor, brake chambers and all other Bendix-Westinghouse components, frequently **outlasts the engine** . . . often is still in use after the truck itself has been retired from service. It is this sturdy construction . . . simplicity of design . . . and reduced number of moving parts that produce savings—**big savings** on any hauling job. So take advantage of this **remarkable record**—make it pay off for you. Get a **lifetime system** and more braking mileage on linings, drums, and tires, by specifying smooth-acting Bendix-Westinghouse—the world's most tried and trusted air brakes!

The Bendix-Westinghouse Compressor—heart of the air brake system—performance proven over more miles on more installations than any other compressor available!



BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE COMPANY
ELYRIA, OHIO

BERKELEY, CALIF.



SIGNS IDENTIFY!

A
HEALING
HAND...



ONE call
ONE order
ONE invoice
For every welding
and cutting need!

TAKE TORCHES AND REGULATORS, FOR INSTANCE...

Your authorized Airco dealer maintains a full supply of moderately priced outfits for welding... brazing... heating... cutting... or soldering. If no standard set-up meets your particular requirements, he can recommend the proper combination of units — and assemble your special-purpose outfit from stock.

Every item is backed by the AIRCO reputation... and delivered promptly to your door!

Whether you want to buy... or simply seek information, check your Airco dealer first! Consult your classified phone directory (under Welding Equipment and Supplies)...look for the famous sign.



AIR REDUCTION

AIR REDUCTION SALES COMPANY • AIR REDUCTION MAGNOLIA COMPANY
AIR REDUCTION PACIFIC COMPANY
REPRESENTED INTERNATIONALLY BY AIRCO COMPANY INTERNATIONAL
Divisions of Air Reduction Company, Incorporated
Offices in Principal Cities

AT THE FRONTIERS OF PROGRESS YOU'LL FIND



A new folder available from Fuller Mfg. Co., Kalamazoo, Mich., describes the proper technique for shifting the new Fuller "Road-Ranger" transmission. With pictures and diagrams, the booklet describes clearly how one lever shifts the transmission up or down through 10 forward speeds without gear-splitting by using the 5-speed shifting pattern twice.

Lubrication is discussed in a booklet released by Lubri-Gas International, Chicago, Ill. The booklet tells how Lubri-Gas lubricates the upper cylinder and improves engine operation.

Fork lift trucks made by the Buda Co., Harvey, Ill., are pictured and described in a booklet available from the manufacturer. The mechanical features and functions of the "FT" model diesel or gasoline trucks are outlined, while maintenance and operation section provides tips on these subjects.

Fuel pumps is the subject of a brochure published by Airtex Automotive Div., Fairfield, Ill., now available from the manufacturer. The catalog gives the Airtex replacements for all trucks and buses. Various tables and schedules provide additional information and hints on the various applications involved.

Metallizing—its chief advantages, costs, durability, etc., are to be found in a periodical, *Metco News*, published by Metallizing Engineering Co., Long Island City, N. Y. The magazine presents the story of the metallizing process in case-history fashion, telling how the process was used successfully by various fleet and industrial establishments.

Miniature lamp catalog of miniature lamps has been issued by the General Electric Lamp division, Nela Park, Cleveland, Ohio. The three-color catalog lists applications for the lamps, and points out that each lamp has been designed to fit a specific application. Statistics including size, life, voltage, and cost of each lamp also are given.

Gem catalog No. 100, contains descriptions, specifications, capacities, etc., of Gem's line of welded steel bench and pump oilers, supply cans, etc., for machine shops, etc. The catalog is available free, with price lists, from Gem Mfg. Corp., Dept. SDP, 1229 Goebel St., Pittsburgh 33, Pa.

Simplified Cleaning for the Automotive Industry is the title of an illustrated brochure which explains how cleaning jobs are streamlined through the application of compounds utilizing the principle of Kelite pH Control. It gives examples, including overhaul, maintenance and miscellaneous cleaning. Requests for free copies should be addressed to Kelite Products, Inc., 1250 North Main St., Los Angeles 12, Calif. Specify Bulletin 116.

FLEET MANAGER'S Scientific diagnostic report

1. Battery Visual Inspection	16. Fuel Pump
2. Battery Voltage	17. Fuel System
3. Oil Level	18. Oil Pressure
4. Oil Change	19. Oil Filter
5. Water Pump	20. Water Pump
6. Radiator	21. Radiator
7. Fan Belt	22. Fan Belt
8. Fan Belt Tension	23. Fan Belt
9. Fan Belt	24. Fan Belt
10. Fan Belt	25. Fan Belt
11. Fan Belt	26. Fan Belt
12. Fan Belt	27. Fan Belt
13. Fan Belt	28. Fan Belt
14. Fan Belt	29. Fan Belt
15. Fan Belt	30. Fan Belt

✓ MAXIMUM SAFETY

✓ LOWER OPERATING COST PER MILE

✓ MORE EFFICIENT PREVENTIVE MAINTENANCE

✓ REDUCES PERIODIC PHYSICAL VEHICLE INSPECTION

✓ SIMPLIFIED, ACCURATE FLEET MANAGEMENT RECORD

✓ COMPREHENSIVE DIAGNOSTIC RECORD OF EACH FLEET VEHICLE



SUN
makes it easier
for you

...to operate more efficiently
by reducing high cost,
automatic mileage repair

If your fleet operates on a plan of automatically replacing parts and making repairs at periodic mileages, a SUN Scientific Diagnosis Program can help you make important savings in operating costs.

The condition of a vehicle depends more upon the type of terrain traveled, climatic conditions, and individual driving habits than upon mileage. The SUN Plan will supplement necessary mileage inspections of tires, oil, gas, etc. by providing a continuous record of the internal condition of each vehicle. At any time, you can know exactly what repairs are needed, the approximate cost or the risk in delaying repair.

Fleet Owners using the SUN Plan are enthusiastic about the savings in ton-mile and maintenance costs. You can have a Scientific Diagnosis Plan tailor-made for your fleet, without cost or obligation—write SUN TODAY!



SUN ELECTRIC CORPORATION

6359 AVONDALE AVENUE
CHICAGO 31, ILLINOIS

SUN Technical Training Schools in 16 cities. Night and Day Courses.

COMMERCIAL CAR JOURNAL, August, 1952

20036

187

Fleet Shop Slashes PM Costs

Continued from Page 61

We go into brakes and pull all wheels every 60 days on road trucks, 90 days on local trucks, and repack wheels. It has been our experience that it is well to replace rings at the 50,000-mile check-up. Broken rings, scoring cylinders, are a frequent cause of engine failure, often the block is ruined beyond repair. We find re-ringing

usually enables engines to reach the 100,000-mile expectation without major damage. Also, at the 50,000-mile check-up, transmissions and rear ends that have not been previously overhauled are replaced or rebuilt. The life of transmissions and rear ends varies considerably, but we feel that one that makes 50,000 miles has done its share

and is an imminent hazard breakdown.

Our old shop, now used for a body department, is only partly enclosed, which, of course, is possible only in a mild climate such as Florida has. We have no set policy on body repairs and rebuilding, but the trailers are shopped when their condition calls for it; then they are put through a complete job, including repainting.

Such operations as washing, lubrication and tire changing are done outside without any cover. If it rains, the men wear rubber coats. This leaves all of the shop building for mechanical work.

Servicing in the shop is done by 23 employees, 14 of whom are experienced automobile mechanics; three are employed in the body shop, two in the parts department, three for washing and one for tire changing.

END

Please Resume Reading Page 62

"Knocking" Movie Available

New information on the basic "hows and whys" of fuel knock is contained in a 30-minute sound movie issued by Ethyl Corp. The film, "Fundamentals of Fuel Knock," is a cinegraphic progress report on a combustion research project which Ethyl is sponsoring at the Sloan Laboratories of Massachusetts Institute of Technology.

Forest Service Honored

An official citation for an exceptional unit safety record in avoiding disabling accidents, was presented in Philadelphia, Penna., to the Eastern Region of the U. S. Forest Service, at the direction of Secretary of Agriculture Charles F. Brannan. The award covers a 7-year safety record among 400 employees performing high-hazard forestry work, largely in rugged terrain in the 14-northeastern states area.

The record cited that the division had reached an accident frequency as low as 1.25 per cent per million man hours worked in 1951 and has been commented on as one of the best group achievements in public or private employment.

The award, one of the annual distinguished service awards of the Department of Agriculture, was presented to Regional Forester William S. Swingle at the regional headquarters for the Northeastern Region, by Mr. William A. Minor, assistant to Secretary Brannan.

In addition to the official award, the Region has also been the recipient of awards through several years from the COMMERCIAL CAR JOURNAL for maintenance of equipment above the national standards established for fleets by the CCJ Board of Experts.

TRUCK FENDER FLAPS

TRUCKER ENGINEERED — LAST LONGER
Meet all state requirements — Used by leading fleets

Note the tapered design, illustrated in cross-section, side view. Tapering distributes flexing action and prolongs life of flaps. Tapered reinforcement rib, top and sides, gives maximum "wind bend" resistance. Bottom has "slip edge"—no rib to hold mud or ice.

14 gauge perforated steel strip molded into top as anchor bar • Rubber, molded through perforations, bonds steel securely in place, can't slip • All flaps molded of quality rubber, impregnated with chopped tire cord • Optionally available with reinforcing sheet of strong fabric between layers of rubber, full length and width.

At Better Distributors Everywhere

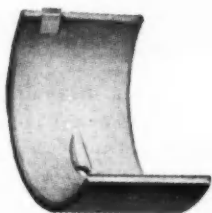
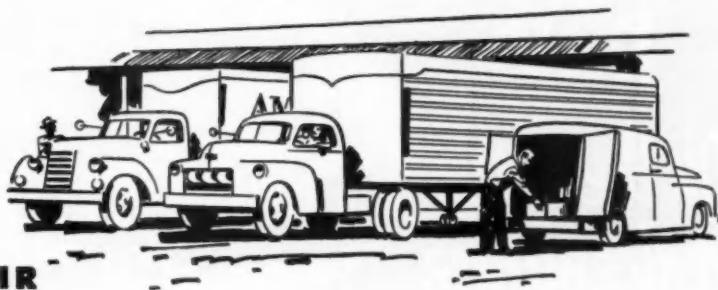
ACE RUBBER PRODUCTS, INC.

100 Beech Street
Akron 8, Ohio

How Fleets GET TOP MILEAGE from today's Engine Bearings

**FEDERAL-MOGUL
COPPER-LEAD BEARINGS**

**HAVE PROVED THEIR
ECONOMY IN SERVICE**



Leading fleet operators throughout the country are getting better performance, greater mileage in heavy-duty operation with Federal-Mogul copper-lead engine bearings.

They are truly *service* bearings. Equivalent in quality and design details to your original equipment bearings, they offer you an important plus-factor for service: You get a *choice of alloys to meet your particular needs*. Federal-Mogul



CA bearings are resizeable, can be used with unhardened shafts. Federal-Mogul CP bearings are over-plated, *precision* bearings (can't be resized) and are used with hardened shafts.

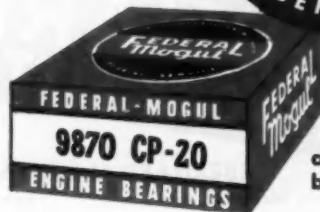
You'll be *miles ahead* with these heavy-duty copper-lead bearings. Ask your Federal-Mogul Jobber!

FEDERAL-MOGUL SERVICE

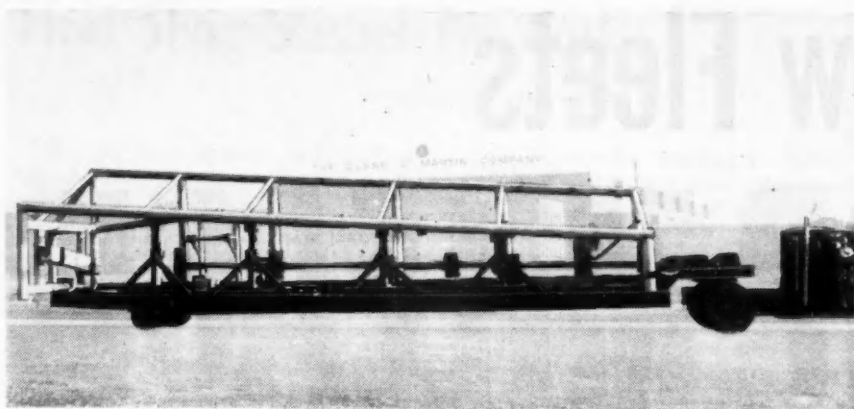
(Division of Federal-Mogul Corporation) • Detroit 13, Michigan

The RODS must be right

Today's precision bearings give top performance in high-speed, heavy-load engine operation. They've got the stuff to take it—if the rods are right. When rods are out-of-round, the bearings go out-of-round. Be sure of your rods. Use Federal-Mogul exchange insert connecting rods. Your jobber provides this service. It's low in cost, tops in quality!



The answer to all your engine bearing needs!

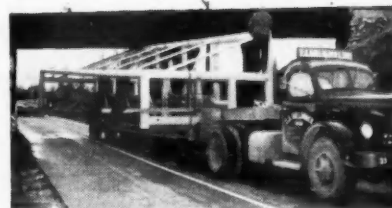


Trucks Deliver As Others Fail

Ready for the take-off, the oversize and overweight load on the specially built trailer leaves the Martin plant at Baltimore for the ride to Texas

TEN welded steel tube fixtures in which to build airplane wings had to be moved from the Glenn H. Martin plant near Baltimore, Md., to a sub-contractor, Intercontinental Manufacturing Co., in Texas. Each fixture weighs 18,000 lb., is 51 ft 8 in. long, 14 ft 4½ in. wide and 10 ft 5¼ in. high.

The fixtures are being used by Intercontinental to build outer wing panels for the U. S. Navy's Martin P5M-1 Marlin anti-submarine seaplanes. The "tools" had to be built complete in Baltimore and shipped as a whole to Texas. No partial disassembly into smaller units was economically feasible.



Tight squeezes like this one near Summerville, Tenn., created a headache for the truck crew who had to improvise many times during the trip

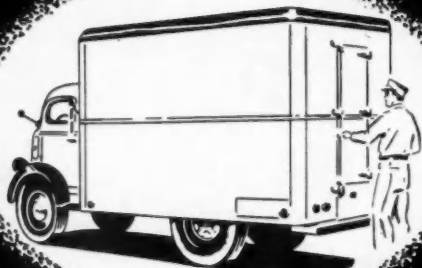
The nine tons would have been easy for railroads, but there are quite a few tunnels between Baltimore and Texas which the fixtures would not go through. That left the highways as the only solution—and even they presented some almost insurmountable problems.

E. J. Gallagher and Sons, heavy hauling contractors of Philadelphia, were called in. Days of study evolved a somewhat circuitous route that would by-pass narrow or weak bridges, low underpasses, practically all secondary roads and other obstacles.

The first fixture was loaded on a specially built trailer and the odyssey began. The going was rather rough in spots and the truck crew had to improvise on many occasions, but there was plenty of clear sailing after crossing the Mississippi River at Memphis, Tenn. All ten fixtures were delivered without mishap.

Modern Functional Design

plus
**"On-the-truck"
Performance**



"sells" Eber HARDWARE

Eberhardware has consistently maintained modern styling, yet retained durability with easy, smooth operation of every product made. Satisfied body builders everywhere tell us Eberhard "on the truck" body hardware installations pile up astounding service hour records, in many instances exceeding estimates of engineers in our testing department.



**Get Acquainted With
THE MOST COMPLETE LINE OF
TRUCK BODY HARDWARE AVAILABLE**

EBERHARD Long Run
TRUCK BODY FITTINGS



EBERHARD MANUFACTURING CO.

Division of the Eastern Malleable Iron Co.

EVARTS AVENUE

CLEVELAND, OHIO

parts and chemicals?

SAY ABOUT THE INCREASE PROFITS!



"90% of my sales of anti-freeze are Du Pont! The Du Pont plan meant a 600% increase in sales. And it meant a 200% increase in related service among 2500 customers!"

ERIC BOOTH
Sheridan Standard Serv. Sta., Chicago, Ill.



"The Early Servicing Plan enabled me to get plenty of business that would have gone elsewhere at the last minute. Sales of anti-freeze were up 50% too!"

W. V. AUSTIN, JR.
Austin's Service Sta., Washington, D.C.



"A lifesaver! The Du Pont plan makes friends as well as customers and profits. My anti-freeze sales doubled."

DELBERT J. AHLSTROM
Rose Park Serv. Sta., Salt Lake City, Utah



"Anti-freeze sales increased 35%. So did cooling system and related service sales. I'm going to start the plan even earlier this year!"

DAN A. GAYLORD
Gaylord's Serv. Sta., Birmingham, Ala.



"The plan helps me (1) get under the hood, (2) talk to more customers, and (3) make more sales relating to under-the-hood service."

JOHN G. SCHWEIGER
Schweiger Texaco Service, Denver, Colo.



"Sales of anti-freeze increased 15% over last year. And the plan helped me avoid the last-minute rush."

JOE DAVIS
Joe Davis' Sweeney Super Service, Peoria, Ill.



"I like the Du Pont plan . . . it builds business! And that's early business, too—not the hectic last-minute rush that gives you little time to talk and sell related services."

RAY E. BROWN
Ray's "66" Service, Spokane, Wash.

There's a dual market in anti-freeze. Du Pont makes both "Zerone" and "Zerex" to help you sell a bigger share of this market. Ask your jobber salesman how the Du Pont Early Servicing Plan can further increase your profits.

*Don't wait another day—call your
"ZERONE" and "ZEREX" jobber Now!*

REG. U.S. PAT. OFF.

REG. U.S. PAT. OFF.



REG. U.S. PAT. OFF.

150th Anniversary

**BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY**

FACTORY FLASHES



ACF-Brill Motors has announced receipt of defense orders amounting to approximately \$2,340,000.

Borg-Warner Corp., Chicago, Ill., has acquired the Reflectal Co., N. Y., which will act and operate as a Borg-Warner subsidiary. Reflectal manufactures aluminum foil blanket-type insulation.

General Motors Corp., Detroit, has opened a new technical center north of Detroit at Twelve Mile and Mound Roads. All phases of experimental production will be included in the center.

Clevite Service, Inc., 6545 Carnegie Ave., Cleveland, Ohio, is the name of a wholly-owned subsidiary recently formed by the Cleveland Graphite Bronze Co. to function as the Replacement Sales Div. Raymond Z. Oswald, former vice president of Cleveland Graphite in charge of replacement sales, will head the new organization with Gilbert M. Salzman, vice president; A. M. Currier, Jr., general sales manager; Wade O'Brian, comptroller; C. A. Dilley, secretary, and, K. M. Leighton, assistant secretary.

Brunner Mfg. Co., Utica, N. Y., has opened a new warehouse in Pittsburgh, Pa., and two in Los Angeles, Calif. Brunner manufactures air compressors from 1/4 hp to 15 hp.

Timpte Bros., truck body manufacturers, has opened a new plant at 300 N. Second St., Albuquerque, N. M.

Electric Auto-Lite Co., Toledo, Ohio, has had service schools in operation this summer on the Pacific Coast in Seattle, Wash., and San Francisco, Calif.

Binks Mfg. Co. has moved office and warehouse to 1241 W. 9th St., Cleveland, Ohio. B. R. Fulton, district manager, will be in charge of the new office with H. G. Pankratz as district engineer.

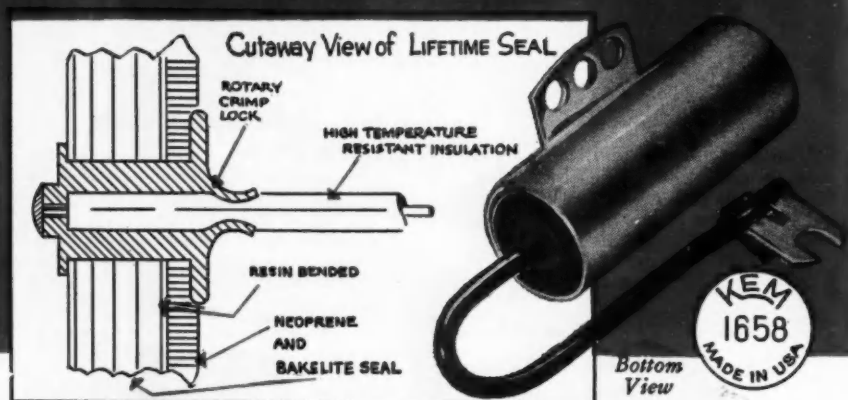
Bowers Battery & Spark Plug Co., of Reading, Pa., has opened a Pittsburgh branch serving western Pennsylvania, eastern Ohio and West Virginia in addition to the Pittsburgh area.

Aeroquip Sales & Engineering, Inc., Fort Worth, Texas, has announced a change in the name of the company to Stratoflex, Inc., and the relocation of general offices, laboratory and factory facilities at 220 Roberts Cut-Off, Fort Worth, Texas. Included in the statement by the board of directors was an announcement of new officers for Stratoflex, Inc. K. W. Davis, president; J. E. Everroad, executive vice-president; S. R. Billingsley, vice-president-engineering; W. R. Cook, vice-president-sales; N. E. Barber, secretary-treasurer; H. E. Reese, assistant secretary, and J. D. Willis, purchasing agent. All of the new officers had held positions with the old firm prior to the name change.

Speer Carbon Co., Saint Marys, Pa., and its subsidiaries, Jeffers Electronics, Inc., International Graphite and Electrode Corp., and Speer Resistor Corp., have consolidated into one company, the Speer Carbon Co., with headquarters at Saint Marys. The various subsidiaries henceforth will operate as divisions of Speer Carbon Co.

Krylon, Inc., Philadelphia, Pa., has expanded its nation-wide promotional program, purchased a new manufacturing plant and the stepped up new product research, according to an announcement by Aaron McKay, president.

NEW! KEM CONDENSERS now lifetime sealed!



Always outstanding in performance and quality, KEM Condensers are now built better than ever. Study the cut-away drawing. See how permanently KEM New Look Condensers are sealed against condensation, fumes, dielectric loss—now they're engineered to be best-sellers.

A Few

KEM LIFE EXTENSION REPLACEMENTS:

- Fuel Pump and Parts . . .
- Prefitted Ignition Parts . . .
- Lifetime Micro-Bronze Filters

KEM



CABLE: KEMSALES, FAIRLAWNNEWJERSEY

MANUFACTURING CO. • FAIR LAWN, N.J.

Join Now!

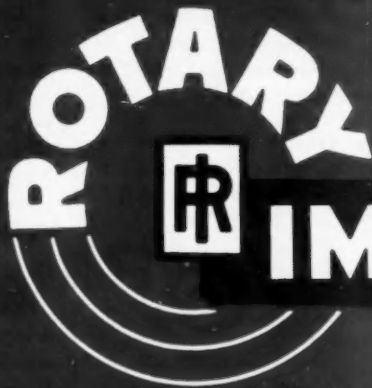
MOTOR LIFE EXTENSION INSTITUTE

WRITE FOR:
Membership Certificate that's proof to motorists you're interested in keeping their cars rolling.

Kem Tune-Up Digest that outlines up-to-date tune-up procedure, (1941-51 specs). Only 25c for Digest and Certificate.

ATTEND:
Free Demonstration Clinics. Held in key cities of U.S.A. — featuring full color sound film.

Air or Electric



Ingersoll-Rand

IMPACTTOOLS

AIR POWERED IN 5 SIZES:



310

RATINGS

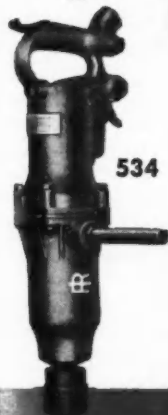
304 ... 1/2" bolts
308 ... 3/8" bolts
310 ... 1" bolts
534 ... 1 1/4" bolts
538 ... 1 1/2" bolts



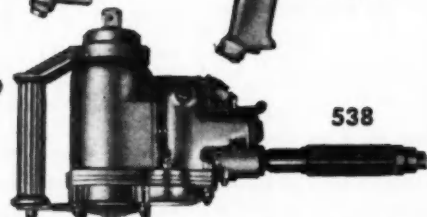
308



304



534



538

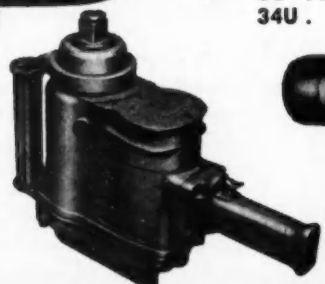
ELECTRIC IN 3 SIZES:



8U

RATINGS

4U ... 3/4" bolts
8U ... 5/8" bolts
34U ... 1 1/4" bolts



34U



4U

806-18

8 rugged Impacttools that run nuts on and off in a jiffy—4 of them are multi-purpose tools that enable you to change swiftly to drill, taper, reamer or screw driver. These amazing Impacttools with thousands of powerful impacts per minute will speed your service jobs.

- ★ Amazingly light in weight
- ★ Easy to handle on toughest jobs
- ★ No kick or twist to operator

Ask your Ingersoll-Rand jobber for a free demonstration in your shop and see for yourself how I-R Air or Electric "Rotary" Impacttools "pay for themselves" in 30 days. Or get full details from...

Ingersoll-Rand

11 BROADWAY, NEW YORK 4, N. Y.

Originator of Impacttools...Air and Electric

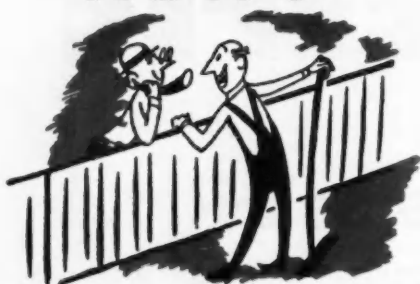
Did you get your free "AUTOMOTIVE SERVICE GUIDES"

?



The most complete time study ever compiled shows you how to cut CHEVROLET, FORD and PLYMOUTH service time as much as 30%. Guides covering other makes are already in preparation. Ask your Ingersoll-Rand jobber or write us.

LOCAL NEWS



South Bend, Ind.—C. E. McColley, Tucker Freight Lines, was installed as president of the South Bend Transportation Club.

Madison, Wisc. — Organized motor freight carriers have asked Gov. Walter J. Kohler for support in their efforts to improve the Wisconsin Highway construction program. John P. Varda, manager of the Wisconsin Motor Carriers Assn., has requested the cooperation from the governor.

Muncy, Pa.—Smith's Truck Lines has been given the OK by the Interstate Commerce Commission for the purchase of Wil-

liamsport Trucking Service, Williamsport, Pa.

Cleveland, Ohio—A new terminal has been opened at the corner of Clinton Rd. and Ridge Rd. by Hayes Freight Lines, with headquarters in Mattoon, Ill.

Chicago—M. F. McCarty, manager of the Chicago Motor truck district, International Harvester Co., has just been awarded a 50-year service pin by company officials at a luncheon in his honor. He began with the company as an employee of the McCormick Machine Harvesting Co., one of the five companies which later on formed the present International Harvester Co.

Nashville, Tenn., has a PAR (Project Adequate Roads) Committee, made up of member organizations of the Tennessee Highway Users Conference and others interested in the project. Charles S. Ragland, Nashville, was named chairman; Lee A. Hyde of Memphis; M. T. Gossett, Nashville; and Col. E. W. Palmer, Kingsport, are vice chairmen. Stan Owens, Nashville, is secretary and Herbert J. Bingham, Nashville, is treasurer.

Houston, Tex.—Seth Tate, president of Texas Freight Co., has announced that the company has made gains of more than 50 per cent for 1951 over 1950 revenue and 52 per cent in tonnage. The revenue increased from \$1,822,983 to \$2,992,053, while 75,568,750 tons were handled in 1951 as compared with 49,556,355 tons in 1950.

Boise, Idaho—Homer Deal, chairman of the Idaho Highway Users Conference, heads an Idaho PAR Committee created at a recent meeting, designed to promote the Project Adequate Roads campaign of American Trucking Associations.

Ann Arbor, Mich.—Professor John C. Kohl has assumed duties of director of the newly-created Transportation Institute, College of Engineering, University of Michigan.

Plainfield, N. J.—Plans for cutting material handling costs in half are on the horizon with completion of a new terminal here by Moore's Trucking Co. The "T" shaped terminal is now under construction on a 12-acre lot at New Brunswick Ave. and Stelton Rd.

Chicago, Ill.—Clipper Transit Co. has opened a new 32-door terminal warehouse complete with motorized freight equipment. The new building, on S. Cicero Ave., includes offices and a garage.

Los Angeles, Calif.—The first mass blood donation to the American Red Cross in a program to embrace 15 terminals in five states was completed by West Coast

(TURN TO PAGE 198, PLEASE)

MONMOUTH *first with the finest*



CLEVITE* 77 runs wetter to lengthen bearing life

THE "unfinished" looking finish of a Clevite 77 bearing is an achievement—not a mistake. The problem was to produce a bearing that gave unequalled service life under severe operating conditions. To accomplish this, the most excellent surface action was required—the maintenance of a uniform oil film under conditions of engine overload—lugging and overspeed.

Hundreds of hours of experiment and test were required to develop the lusterless, satin finish you now see on Clevite 77 Bearings. Examine this finish—it accomplishes exactly what was sought.

Clevite 77 Main and Connecting Rod Bearings for replacement use are furnished under our Monmouth Brand and only for applications where engine manufacturers' specifications call for Clevite 77.



*The words Monmouth, Clevite and Micro are registered trade marks of The Cleveland Graphite Bronze Co.

THE CLEVELAND
GRAPHITE BRONZE CO.
Cleveland, Ohio

CGB FIRSTS: The development of continuous strip casting, 1929—thinwall babbitt lined steel-backed bushings, 1931—continuous casting of copper lead on steel strip, 1934—tri-metal bearings, 1938—Micro* Bearings, 1939—Clevite 77, 1944—and others which have helped to revolutionize the lined bearing industry.

double trouble

OPERATING COSTS

MAINTENANCE COSTS

change to

WOLF'S HEAD

Profitable fleet operation depends on keeping operating and maintenance costs down. You can reduce both by using WOLF'S HEAD and the WOLF'S HEAD Laboratory Control Plan.

WOLF'S HEAD Heavy Duty Oil, 100% Pure Pennsylvania, meets every requirement for severe heavy duty service. It provides superior film strength, high detergency, thorough dispersancy, and complete protection against corrosive acids, rusting and oxidation. Approved by Caterpillar, General Motors, and under U. S. Army Specification MIL-0-2104. And it keeps oil consumption to a minimum!

WOLF'S HEAD Motor Oil . . . 100% Pure Pennsylvania . . . Specially Refined and Scientifically Fortified "to clean as it lubricates" and to protect against corrosive acids, rusting and oxidation. It holds oil consumption down.

WOLF'S HEAD Laboratory Control Plan—free and without obligation—gives you specific recommendations for each fleet unit, based on analysis of crankcase oil. It helps establish correct drain periods, conserves engine life and reduces lay-ups. Write to us for information.

Free! "RULES OF THE ROAD" Folder. Contains driving information, traffic rules, speed laws, for all states. Give them to your drivers.



WOLF'S HEAD OIL REFINING CO., Inc., Oil City, Pa., New York 10, N. Y.

WOLF'S HEAD

MOTOR OIL AND LUBES

100% Pure Pennsylvania
Scientifically Fortified



Member, Penna. Grade
Crude Oil Association



Many Costly Fires Like This Are PREVENTED by "AKBAR" —

The KINNEAR Steel Rolling Fire Door



40% of the *biggest* fires in a single year showed lack of fire-door protection as contributing to the heavy losses.*

You get *positive, automatic, dependable* fire protection at doorways and windows with *Akbar* Fire Doors. They're *pushed* downward by a strong spring . . . *controlled* in downward speed . . . and operable *after* closure, for emergency use.

These efficient doors remain coiled out of the way, overhead, when not in use, but lower *automatically*, with speed, efficiency and *safety*, when fire threatens. They combat fire loss by cutting off drafts, blocking flames, and confining fire to small areas.

*(As reported in the Jan. 1947 Quarterly of the National Fire Protection Association.)

Approved and labeled by Underwriters' Laboratories, they have saved as much as 33% of their cost *annually*, in reduced insurance rates. Built to fit windows, doorways or other openings of any size.

"Akbar" Doors can also be equipped for daily service use, with or without motor operation. But standard (non-labeled) Kinnear Rolling Doors are preferred for service use where extra fire protection is not needed.

The KINNEAR Manufacturing Co.

FACTORIES:

2100-20 Fields Avenue, Columbus 16, Ohio
1742 Yosemite Ave., San Francisco 24, Calif.
Offices and Agents in All Principal Cities



KINNEAR

ROLLING DOORS

Local News

Continued from Page 196

Fast Freight. The Red Cross Bloodmobile was brought to the main plant and 1500 sq ft of office space was temporarily converted into hospital quarters.

Boston, Mass.—For the fifth consecutive year, Arthur V. Macedo, Hemmingway Bros. Trucking Co., New Bedford, Mass., holds top honors in the annual truck rodeo, held recently, under the auspices of the Massachusetts Motor Truck Assn.

* The First National Bank, of Boston, began operation of its interline clearing house for motor carriers in the six New England states. The clearing house was started early last year, and becomes the ninth bank interline system in operation today.

Kingsport, Tenn.—The Appalachian Traffic Club, representing the area of Kingsport, Johnson City and Bristol, Tenn., held an annual import-export night recently at the Johnson City Country Club. Program Chairman was S. R. Jennings.

Chicago, Ill.—Establishment of warehousing service for the southwest through the appointment of Parts Warehouse Co., 2715-19 Main St., Dallas, Tex., has been announced by Felt Products Mfg. Co., Chicago, manufacturers of automotive gaskets.

Sioux City, Iowa—Death has come to the late president of Wilson Trailer Co., this city, Clarence A. Bersinger, who has been ill for the past several months.

Rochester, N. Y.—George F. R. Eckhardt, president of the Rochester Carting Co., died early in March while visiting in Philadelphia. He was president of the firm since 1939.



"Awright! Awright! Get back into your truck—but see that it doesn't happen again!"

When you need an extra truck...

Call
HERTZ



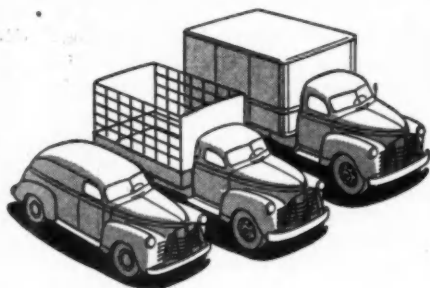
When peak loads demand extra trucks, rent a truck from Hertz. It's easy, it's convenient, and the cost is low.



When your company trucks have trouble on the street... avoid delays... just call the nearest Hertz station.



Businesses not owning trucks often have need of a truck at one time or another. So do individuals, for moving, or other personal needs. For such occasional use, call Hertz.



Rent passenger cars from Hertz too! Hertz, world's largest, has properly conditioned, current model passenger cars for rent in more than 500 cities throughout the United States, Canada, Great Britain, Mexico, Hawaii and Alaska. Rent a new Chevrolet or other fine car and drive it as your own for as little or long a time as you want! Gas, oil and proper insurance are included in the low rates. Countless thousands rent cars from Hertz for business or pleasure—try it!



Why invest in extra trucks... and have to pay to maintain them in long periods of idleness... when it's so easy to rent a truck from Hertz on a moment's notice? You can rent a truck for just as long as you need it, pay only as you use it, with gas, oil, insurance... *everything* furnished but the driver. *When you need a truck, call Hertz!*

Enjoy the many HERTZ SERVICE advantages

Who can rent from Hertz? Large corporations, small companies and individuals too rent trucks from Hertz. You need only a driver's license and normal identification to rent exactly the kind of truck you need for your specific job. In most of the more than 500 cities in the nationwide Hertz System, fleets of 1/2 ton, 1 ton, 2 ton, pickup, panel, van and stake body trucks are available and are always kept in excellent condition.

How much red tape? None at all! Accredited business firms simply call on the phone, make arrangements, send a driver for the truck. Call your Hertz station any time and rent a truck. In a matter of minutes you or your driver will be on the way! You pay only for actual time and

mileage... no hidden charges of any kind.

How small the cost? The rate for the use of a 1 1/2-ton Van or Stake truck for a 12-hour day in Indianapolis, Indiana is only \$7.50, plus 9c per mile, including gas, oil, and insurance. Thus, the total cost for a 30 mile trip is only \$10.20. Rates lower by the week or on a long-term lease. (In other cities the rate may be somewhat higher or lower.)

Short term rent—long term lease. Hertz' Truck Lease Plan, for one truck or a fleet... is a proved plan that releases capital investment, and yet gives every single advantage of ownership, at a cost often less than ownership! For complete information about either short-term renting, or long-term leasing, call your local Hertz station, or write to the address below. Learn the facts. You'll profit!

LOOK IN YOUR TELEPHONE DIRECTORY UNDER "H" FOR YOUR LOCAL HERTZ STATION

NATIONAL HEADQUARTERS: **HERTZ Drive-Your-Self SYSTEM** DEPT. 582, 218 S. WABASH AVENUE, CHICAGO 4, ILLINOIS

COMMERCIAL CAR JOURNAL, August, 1952



INTRODUCING . . .

... Richard C. Woodhouse, formerly assistant general truck sales manager for the GMC Truck and Coach Division, as general sales manager.

... Joseph O. Young, as general operations manager, and Harry E. Eyler, as general sales manager, Trailmobile, Inc., Cincinnati.

... George N. Decker, vice president, Kellogg Division of American Brake Shoe Co., New York.



... William F. LeFevre, chief engineer at Freightliner Corp., Portland, Ore.



... Walter J. Lee, general manager of the Goodyear Tire & Rubber Co. Rim Div., Akron, Ohio, replacing Joseph G. Swain, who will continue as consulting manager.

... William A. McKinley, as president of Midland Steel Products Co., Cleveland, Ohio, succeeding E. J. Kulas, who passed away recently.



... Charles A. Garritter, Jr., general manager, Hodell Chain Co., Cleveland, Ohio.

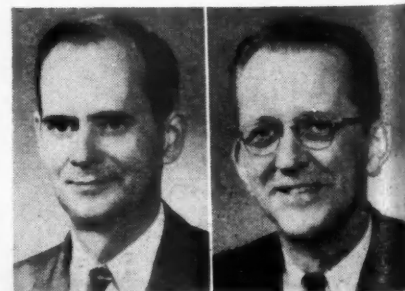
... E. W. Jolly, as zone manager GMC Truck & Coach Div., Pontiac, Mich., succeeding H. A. Hand who retired July 1.



... Thomas J. Delaney, director of public relations, Autocar Co., Ardmore, Pa.

... Rufus B. Jones, industry service director, Trailmobile, Inc., Cincinnati, Ohio.

... A. R. Carr, manager of passenger tire sales, General Tire & Rubber Co. (left), and Joseph A. Beckett (right) as manager of Kraft System Sales.





STOP

COSTLY SKID ACCIDENTS

Penetred[®]

THERMODUCTOR

SKID-CONTROL COILS

FOR ALL YEAR 'ROUND

Penetred THERMODUCTOR Steel Claws give you Skid-Control and MAXIMUM DRIVING SAFETY all year 'round . . . Claws that cut thru ice and snow in winter, and slick road film in summer, for INSTANT ACTION . . . DEPENDABLE ACTION. No precious time wasted, no turning on the switch, and waiting for sand or grit . . . just apply the brakes, for SAFE Straight Line Stops . . . or step on the gas, for FASTER Starts without side Sway or slip.

COOLER RUNNING

Penetred THERMODUCTOR Coils also reduce excessive heat that destroys vital tread rubber in regular tires, by conducting it out of the shoulder area . . . to give you the COOLEST running tire ever known.

FEWER PUNCTURES

Penetred THERMODUCTOR Coils act as an armour plate and reduce punctures from 75 to 90 percent, by shunting off broken glass, nails and many other objects that otherwise cut the carcass, and keep it in better condition for the second and third retread . . . for longer mileage. Some records show from 35 to over 100 percent increase.

Get a Free Demonstration

No words can describe the spectacular performance of Penetred Skid-Control . . . only your foot on the Brakes, or on the Gas can tell the story, for there is nothing in the world that gives you the "Feeling of Security" that Penetred gives you all year 'round . . . so get a Free demonstration today . . . in the meantime write for "The MIRACLES of Penetred."

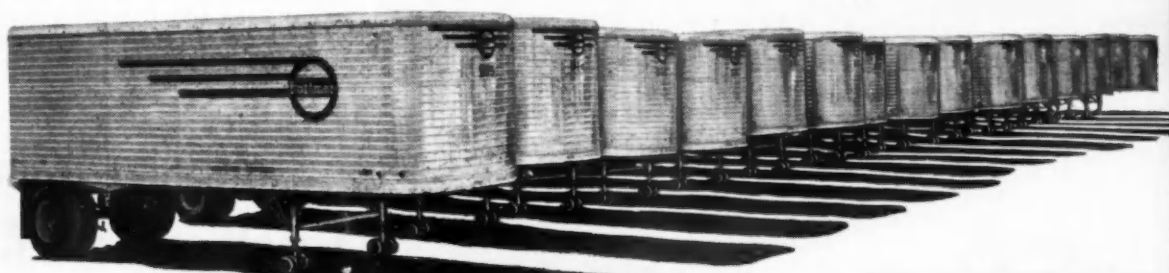


ASK ANY TIRE SERVICE STATION ABOUT 'PENETRED'

PENETRED CORP. MARSHFIELD WISCONSIN

FOLLMER TRUCKING COMPANY

Hauls more at less cost...

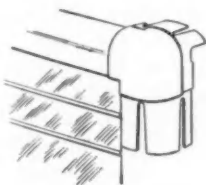


... BY CONVERTING TO TRAILERS OF LIFETIME ALUMINUM

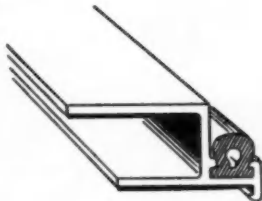
A growing fleet of Follmer trailers now travels the highway night and day . . . taking road wear and tear with a minimum of deadload weight and without any of the maintenance expense of painting. Already over a hundred trailers of tough Reynolds Aluminum alloys are paying operating dividends, and still others are in production for Follmer at Trailco Manufacturing and Sales Company, one

of the national network of manufacturing distributors listed below.

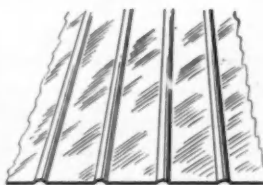
Built with standard parts these rugged all-aluminum trailers are soundly engineered and quality controlled. Standard sizes are available for your particular requirements. This network of trailer producers have service parts available coast to coast. Manufacturing distributorships are still available in some areas.



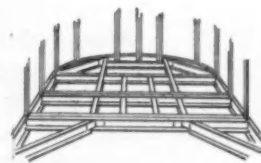
REAR CORNER CASTING, with exclusive fingers feature, ties in to longitudinal radius section, rear header section and rear vertical corner post.



DOOR EXTRUSION has retaining lip designed to protect outside skin and operator. Uses T-slotted replaceable Koroseal gasket.



SPECIAL CLAD aluminum alloy skins are corrugated to provide extra rigidity and strength.



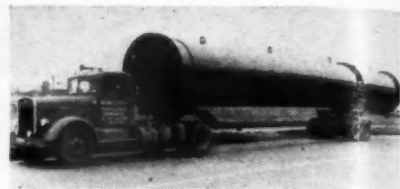
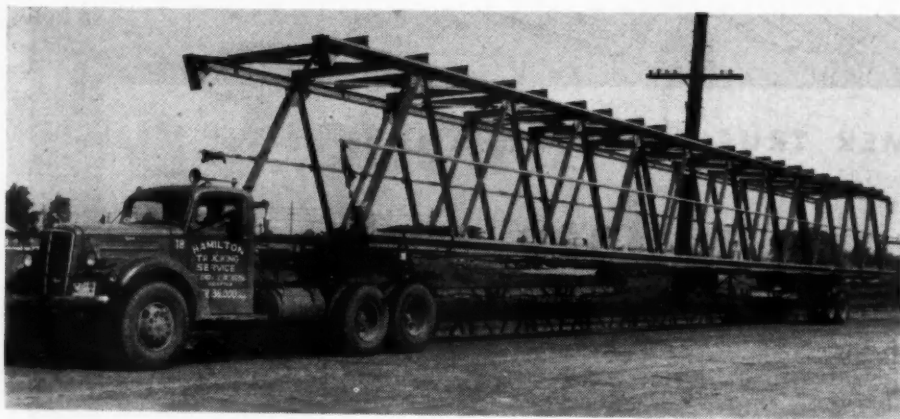
ALL-ALUMINUM pre-cut structural members form the extra strong, rigid 5th wheel spider.

MANUFACTURING DISTRIBUTORS

ATLAS BODY CORPORATION
Philadelphia, Pennsylvania
BAKER TRAILER AND BODY CO.
St. Louis 3, Missouri
BARTLETT TRAILER CORPORATION
Chicago, Illinois
BLACK DIAMOND TRAILER CO., INC.
Bristol, Virginia
EDWARDS TRAILER COMPANY
South Bend, Indiana
JOHN EVANS MFG. CO., INC.
Sumter, South Carolina

HARWILL, INC.
St. Charles, Michigan
HOBBS MANUFACTURING COMPANY
Fort Worth, Texas
KEYSTONE TRAILER & EQUIPMENT CO.
Kansas City 1, Missouri
KINGHAM TRAILER COMPANY
Louisville, Kentucky
LOADCRAFT, INC.
Augusta, Kansas
MACK TRAILER AND TRUCK MFG. CO.
Detroit 1, Michigan

MILLER TRAILERS, INC.
Bradenton, Florida
THOMPSON TRAILER COMPANY
Pikesville, Maryland
TIMPTE BROTHERS, INC.
Denver, Colorado
TRAILCO MFG. AND SALES COMPANY
Hummels Wharf, Pennsylvania
WILLIAMSSEN BODY AND EQUIPMENT CO.
Ogden, Utah



The Hamilton adjustable-length trailer tackles another extra length job

This load has the largest dimensions of any hauled by Hamilton. It consists of a 10x10x110 ft steel conveyor housing, fabricated in Seattle



on the smoothest street...



or roughest road...

let *Lamson* fasteners carry the load!

As the world's largest manufacturer of automotive fasteners, Lamson & Sessions has a very real responsibility to provide quality fasteners for every automotive need. In the case of slick pleasure cars quietness and good looks are at a premium. Bolts and nuts holding the chassis together must hold tight. No rattles or squeaks can be tolerated. Fasteners that show must be glamorized with chrome or stainless steel. Trucks and heavy equipment, on the other hand, require extra tough, rugged fasteners that can "take it" under all road conditions. So no matter what the requirement, Lamson has the fasteners to fill the bill... for original equipment or repair work.



The LAMSON & SESSIONS Co.
1971 West 85th Street • Cleveland, Ohio

Plants at Cleveland and Kent, Ohio • Chicago • Birmingham

WORLD'S LARGEST MANUFACTURER OF AUTOMOTIVE FASTENERS

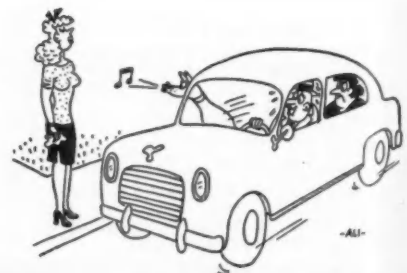
Stretching Trailer Lengthens Load Area

A trailer with adjustable length has enabled the Hamilton Trucking Service, Seattle, Wash., to carry loads as long as 110 ft and as heavy as 24 tons on the highways of the Pacific Northwest, under special permits.

By the use of one square beam which slides into another beam, the driver can adjust his length from 30 to 60 ft simply by setting the brakes on the rear wheels and driving away from them. The box-beams are of built-up plate steel, the larger 10 in. square and the other just enough smaller to fit into it. They are tied together by an adjustable pin in holes spaced at 4-ft intervals.

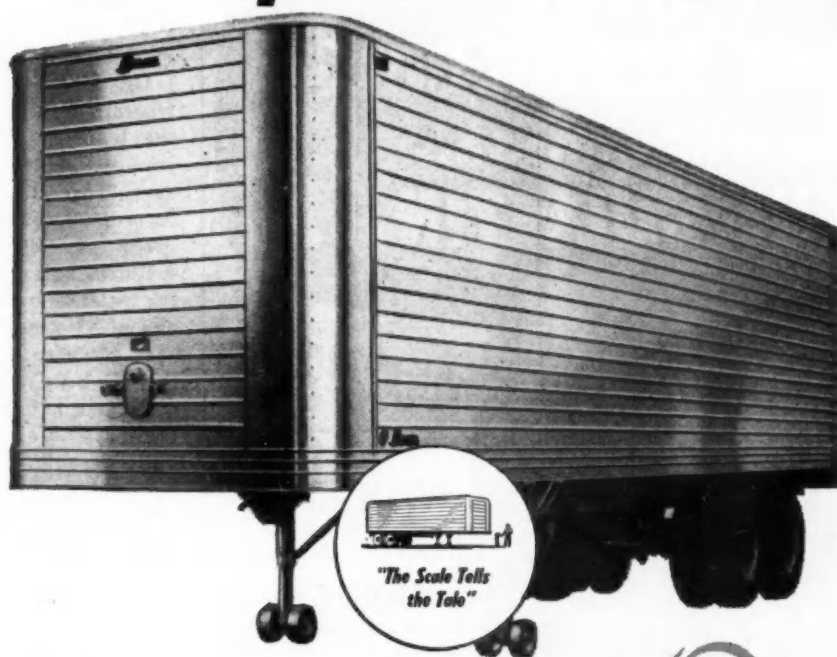
In the event of a really long load, the parts of the trailer are pulled completely away from each other, with the beam-ends chained up to the load. Three cables carry air for the brakes and wiring for the rear lights.

Hamilton now operates two of these special trailers, fabricated from Hamilton's design by Bruce's Welding Shop, Renton, Wash. The trailers are particularly helpful in the moving of large steel assemblies for bridges, buildings, etc., a field in which Hamilton has become specialist in the Pacific Northwest.



"Now where d'ya suppose he learned that trick?"

a Brown lightweight aluminum trailer is better than money in the bank



"The Scale Tells the Tale"

Its extra payload pays a 6% return

MONEY in the bank doesn't pay 6%, but Brown's light weight pays you an extra return of 6% on your trailer investment.

You tell us —

What is your average payload?

What is your trailer cost per mile?

What is your total cost per ton-mile?

And we'll show you —

A 6% saving on every 20 tons.

How to get along with 1 less trailer for every 16 you operate.

How to eliminate 1 trip out of every 16 and still carry the same tonnage.

How the extra payload you can carry with a Brown will cover depreciation, interest and insurance on every trailer that runs 50,000 miles a year.

Let us demonstrate the greater profit possibilities with Brown Lightweight Aluminum Trailers. Simple arithmetic will do it. Ask your local Brown distributor how to get trailer weights down and payloads and profits up.

✓ Lighter Weight

✓ Bigger Payloads

✓ Increased Profits



Toledo, Ohio Spokane, Wash.
Distributors in principal cities

Older Workers Considered Better Employment Risks

Study reveals greater skill, endurance, stability, fewer accidents, less lost time, among older men

If you do
ENGINE REBUILDING
you will want this
USEFUL BULLETIN...

HOW Fast Precision Boring
... Quick, Easy Set-ups



YOUR

WITHOUT

CHARGE

HYDRO-BORER

FOR
ENGINE REBUILDING

SEND TODAY!

See for yourself how you can profit from these HYDRO-BORER benefits:

- New Chatterless Feed Principle
- Automatic Center-to-Center Accuracy
- Time-Saving Set-up

HYDRO-BORER CO., Dept. 10
1601 E. Olympic Blvd., Los Angeles 21, Cal.

Send me my free copy of
"HYDRO-BORER for ENGINE REBUILDING":

Name _____

Co. _____

Address _____

City _____ State _____

Our engine rebuilding includes: ☐ Diesel
☐ Gasoline
☐ Both

By. W. Schweisheimer, M.D.

IF A sudden outbreak of war should drain the available shop labor market, the shop superintendent would be forced to consider the older man with much less regard for his advanced age. The possibility that this situation will develop changes daily with the headlines, but the availability of older, more experienced shop men grows steadily. There is a compelling reason for this growth. People live ten years longer than they did 20 years ago.

People not only live longer today, they age less quickly, they are efficient longer than in former days. The chronological age is not the same as the functional age, for the former is measured in years and months, the latter in skill and productivity.

Dr. R. A. McFarland, Professor at Harvard Medical School, has compared the industrial efficiency of older and younger workers. "Older workers," he says, "have at least as good production records as younger men. In a sample group of 1500 workers, those rated *excellent* averaged over 47 in age while the *inferior* workers had an average age of 41 years."

So by scientific analysis, we can see that the only disadvantage in hiring an older man is that he has had too many birthdays. We can see his relative productivity, skill, accuracy, and reliability but we have a difficult time convincing a prospective employer that an older man is a good employment risk.

There are a number of prejudices which have grown with the machine age which have been exposed as groundless. For example, many people believe that older workers are injured more often, are more frequently absent due to illness, that they will not work as hard as younger men, efficiency diminishes as age advances, they are too slow, impatient, over-confident, and just can't learn. There is no basic truth to any of these.

(TURN TO PAGE 206, PLEASE)



"Hey, Pop, look a' what I found under the hood of our car!"

your Guidepost to Better Roller Bearing Service

BOWER

TAPERED AND STRAIGHT
ROLLER BEARINGS

available through

FEDERAL-MOGUL

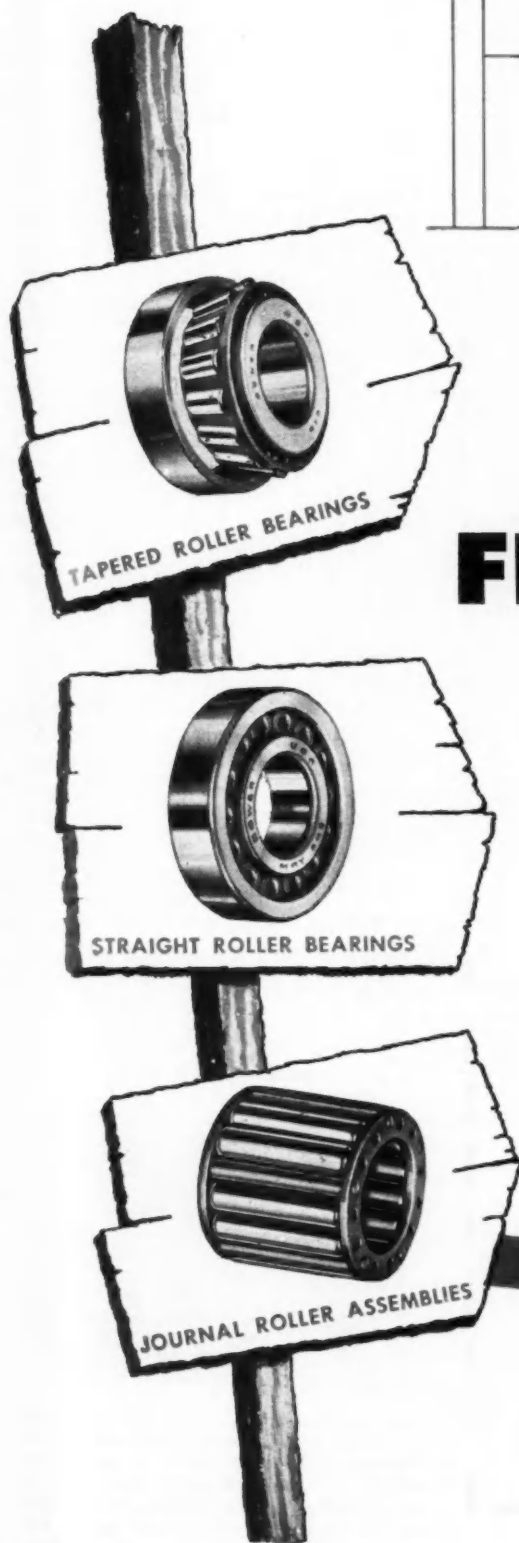
You get quality, coverage and ready availability in the Bower roller bearing line, available through Federal-Mogul jobbers.

Bower makes *both* tapered and straight roller bearings. Tapered roller bearings are Spher-O-Honed—which means special quality features exclusive with Bower. Straight roller bearings have finest tolerances and durable double-lip construction for strength.

Good mechanics choose Bower roller bearings!

FEDERAL-MOGUL SERVICE

(Division of Federal-Mogul Corp.) DETROIT 13, MICHIGAN



Older Workers, Better Risks

Continued from Page 204

Lower Injury Rate

THERE are certain physical characteristics of old age—which the person himself is the first to recognize and remember as a limitation. He may not lift a heavy weight, move as quickly, is more likely to be injured in falling. Therefore, an older person is equally likely to call for mechanical or

other help in lifting, make fewer trips to the tool crib, and probably be the first one to wipe up or throw absorbant on spilled oil or grease. On the negative side, he recovers more slowly than a younger man, but accident reports available from the Bureau of Labor Statistics indicate that the decrease in the number of lost-time accidents more

than offsets his increase per accident.

Professor McFarland has also investigated the accident question with a large test group selected by age. In the 60-year old classification, there were records of less than half the number of accidents as those which involved men age 20. In the former group were a number of truck drivers, older men, up to 60 years of age.

This investigation is backed up by information given out by the Bureau of Labor Statistics, which reports that the highest injury rate develops at age 20. Thereafter, the injury rate drops rapidly, particularly for the more important class of non-disabling injuries. The frequency rate of injuries for workers over 60 is less than one third that for workers in the late 20's. Not placing too much weight on the wide gap indicated here, it is true that older men may have been transferred to less hazardous jobs due to their advanced age.

Greater Endurance

IN THE Harvard Fatigue Laboratory it has been stated that "there is little reason for taking the position as a ground for action, that in general men over 45 years of age are less effective than others in industrial occupations."

To study a particular skill which requires years of study and practice, one will find that the rate-of-error decreases as age advances, and that prime maturity and prime productivity does not begin until age 40. If the individual employed in a particular shop is valued at age 40 because he has been with the firm for 20 years, why shouldn't the job applicant be regarded as a similar prospect, all things being equal?

Perhaps the unit-per-hour speed is somewhat less, the eyesight or hearing slightly impaired, but the decrease in

(TURN TO PAGE 238, PLEASE)

POWERFUL, NEW SPARTON HORNS CLEAR THE ROADS AHEAD!



Model 271C—compressed-air horn with chrome-plated trumpets



Model 280C—Su-Power twin-trumpet Dual mounting—chrome-plated horns

Four-way sales appeal: (1) needs only 10-100# pressure to operate; (2) consumes only 6 cubic feet per minute at 100# pressure; (3) does not affect air brakes; (4) has far-reaching tone. Also available: Model 270—hammerloid gray, with control valve.

High-intensity signal with lightning response. Easy to install with no extra equipment. Screened trumpets. Model 281C—single mounting in chrome. Model RC1—dual mounting in red and black enamel. Electrically operated.

SIGNAL WHEN YOU TURN!



Red—No. 651
Amber—No. 652



Red—No. 6103
Amber—No. 6106



Red—No. 664
Amber—No. 665



Model No. 650
—Red and
Amber Lenses

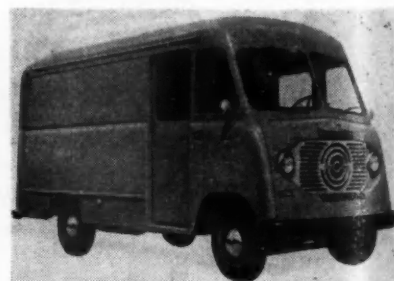
New Sparton Directional Signal Lamps

Sparton Series 600 two-face directional signal lamp (right) has only 2" depth, one bulb! Light weight eliminates fender tearing. Single-face pedestal lamp, full-flush lamp and semiflush lamp available individually or in complete sets with self-cancelling switch.



MAKERS OF QUALITY
AUTOMOTIVE EQUIPMENT
SINCE 1900

New Retail Body



A new line of parcel delivery bodies designed for Chevrolet forward-control Models 3742 and 3942, is being produced by Car-O-Van division of Universal Sales, Inc., Delaware, Ohio. They are available on either 104 in. or 125 in. wheelbase from Chevrolet dealers.

the ASF safety 5th wheel



From coast to coast, throughout the U. S. and into Canada, Aero Mayflower operates a famous fleet of units like this—now using ASF 5th Wheels exclusively.

"maintenance costs? ... one 50¢ shim!"



F. J. Grumme

In two years, according to Fred J. Grumme* of Aero Mayflower, they have installed ASF Safety 5th Wheels on 250 of their tractors. "Our only expense," Mr. Grumme says, "has been one 50¢ shim. Our men always must have the safest and best equipment, and we are doubly pleased when it is also the most economical."

ASF Safety 5th Wheels are built of alloy cast steel, the same kind that ASF uses in commercial castings subject to high stress and strain. Also, the ASF Wheel provides a snug king-pin fit and has a larger area of contact between pulling jaws and king-pin than any other 5th wheel. But instead of costly rebuilding when parts wear, as all

metal parts must, the fleet owner inserts one or two ASF shims and the coupler is ready for more thousands of miles of slack-proof service.

Ask your nearest ASF distributor for the complete story of America's toughest and safest . . . the ASF Safety 5th Wheel. And send for additional information and specifications. American Steel Foundries, Automotive Division, 410 N. Michigan Ave., Chicago 11, Ill.

*Vice President in charge of Equipment Maintenance,
Aero Mayflower Transit Co., Indianapolis, Ind.

ASF safety 5th wheels

Hercules

TRUCK EQUIPMENT



DUMP BODIES
Medium and Heavy Duty

HYDRAULIC HOISTS
For Dump, Grain and
Platform Bodies

**TRAILER DUMP BODIES
& HOISTS**
(with and without trailers)

**PICK-UP
DUMP CONVERSIONS**

LOAD-N-GATE
Hydraulic Lift Tail Gates

**LIME-FERTILIZER
SPREADERS**

**SPLIT-SHAFT
POWER TAKE-OFFS**

**MECHANICAL
POWER CHUTES**
For Coal—Other Material

CEMENT SPREADERS
For Soil Cement Roads

HERCULES
STEEL PRODUCTS CORPORATION
Gallien, Ohio
Dent. 801

Older Workers

Continued from Page 206

slight speed will more than be made up by a competent, workmanlike attitude which comes with advancing years.

In another test group the chronological age was 30. These men were tested for eyesight, depth perception, color identification, hearing, and given a thorough physical examination. An over-all pattern was evident that these men were far ahead of a similar test group whose age averaged 20. Likewise, a test group average age of 60 which consisted of 8400 men, the number of passing grades was as high in proportion as those in their twenties.

Mental-Physical Life

IF AN individual of mature years, perhaps we should say 50 and over, were made to realize that he had productive years still ahead, and that he should adjust his living to his age, the problem of employability would almost disappear. The mental depression which reaches a man of 50, still active and energetic, who realizes that he is no longer a "good employment risk" just cannot be described.

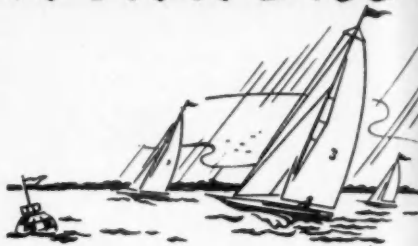
I have found that proper food, rest, and relaxation is important in keeping the older worker healthy and efficient. Medical men have agreed that competence of healthy older people is a matter of proper balance—nutrition, rest, attitude. Further, that in the event of an obvious physical and efficiency decline, a checkup of food habits is recommended. Bad food habits will definitely diminish the efficiency of older workers.

So we find much to offer on the positive side when considering the employability of an older man. Statistics and medicine have proven him a good physical risk. The older worker has skill and experience which is a definite asset. He has patience and as a rule sobriety and stability of living habits.



"Frankly, I don't remember what I had to eat either."

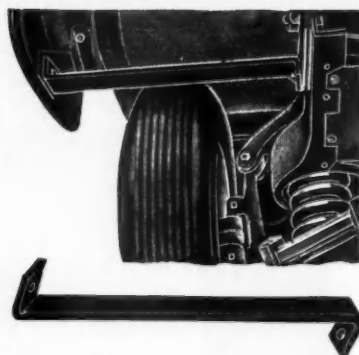
CHAMP-ITEMS SERVICE WINNERS



are **TIME SAVERS**
MONEY MAKERS

You can do the job Faster—Better and Safer with the more than 200 Champ-Items Automotive Replacement Parts designed to lick tough service problems. And you keep your customers satisfied. Write for latest Supplement to Champ-Items No. 500-R Catalog.

A NEW SERVICE WINNER for 1952 Ford Cars



CHAMP-ITEMS No. 645 FRONT BUMPER SUPPORT BRACKET for 1952 FORD CARS. Brackets provide an auxiliary support at ends of front bumper. The additional rigidity guards against the possibility of bumper end being pushed back, causing damage to front fender. Can be installed in 10 minutes. List \$3.00 per pair.

ORDER FROM
YOUR JOBBER



CHAMP-ITEMS, INC.
6191 Maple Ave., St. Louis 14, Mo.

FAGEOL VANS

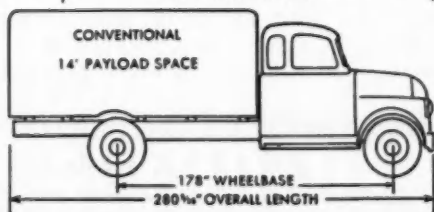
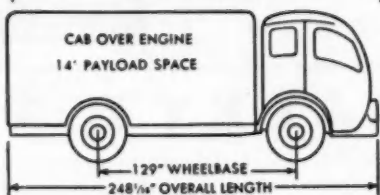
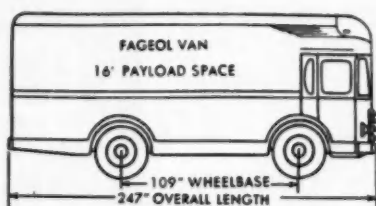
*give you more payload
space in shorter trucks*



GREATER LOAD SPACE

*on shorter
wheelbase*

This sketch shows typical comparison. Note how Fageol Van Model FV-20 with bigger payload, 16 ft. body is shorter than competitive trucks with 14 ft. bodies.



Fageol Van Model FV-24

Before you buy any truck, see the new Fageol Vans . . . in 20 to 35 ft. body sizes.

Their integral bodies give you more space for payload than is available in any other trucks of equal wheelbase.

They're handsome in appearance, superior in performance. And, because their bodies of bridge-type construction make every one of the uprights and cross members a part of the trucks themselves, they're stronger, but at the same time lighter than other trucks.

Designed and built under Fageol *Super Freighter patents, Fageol Vans utilize many mechanical components — engine, transmission, axles, steering, instruments, etc. — of International L-150-160-170-180-190-200 trucks. Parts and service available from over 7,000 dealers.

For complete specifications, further details, write Twin Coach Co., Kent, Ohio. Ask for Bulletin L-5494.

*Super Freighter. Registered trade name.

A-5598

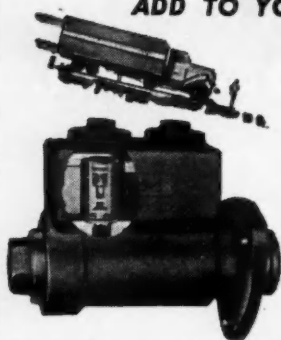
FAGEOL VANS GIVE YOU 200 TO 500 CUBIC FEET MORE PAYLOAD SPACE

TWIN COACH COMPANY
KENT, OHIO

IN CANADA:
TWIN COACH OF CANADA, LTD.
TORONTO 5, ONTARIO



ADD TO YOUR TRUCK SAFETY—CUT YOUR POWER BRAKE COSTS IN HALF!



MICO POWER BRAKE CYLINDER

STOP! The powerful 2-stage MICO Power Brake Cylinder progresses in mid-action from a low-pressure to a high-pressure cylinder. Insures smoother, surer stops. Replaces the hydraulic master cylinder. Simple to install.

MICO BRAKE LOCK

HOLD! Flip the switch—step on the brake pedal and you have more dependable holding power than ever before attained with any emergency brake. The MICO Brake Lock is simple to install in any hydraulic braking system.



WRITE FOR CATALOGS
AND NAME OF YOUR NEAREST MICO DISTRIBUTOR
MINNESOTA AUTOMOTIVE, INC. MANKATO, MINNESOTA

Time Savers...
KEN TIRE CHANGING **TOOLS**
...they're "Job Designed."

KEN-TOOLS are hand forged from chrome nickel alloy steel...heat treated for extra long life...Best By Actual Test!

KEN-TOOL... LARGEST EXCLUSIVE MAKERS OF TIRE AND WHEEL CHANGING TOOLS

See Your Local Jobber for Our Complete Line
The KEN-TOOL Mfg. Co.
Akron 5, Ohio

CCJ News Reports

Continued from Page 98

Optimism Voiced for Business

James A. Farley, former Postmaster General and now head of Farley-GMC Truck Co., Inc., New York, has sounded a definitely optimistic note on business conditions after only a month in his new job. Speaking informally at a reception in July, Mr. Farley stated the largest part of his sales output is going to the butcher, the baker and the appliance store dealer. "This strikes me," he added, "as an indication that business men in the New York area anticipate profitable days ahead."

Pennsylvania Trucking Officers

The 19th annual meeting of the Pennsylvania Motor Truck Association elected the following officers: F. B. Noerr, of Noerr Motor Freight, Inc., Lewistown, Pa., president; W. W. Ward, second vice president; James E. Crass III, and Francis X. McDermott, third and fourth vice presidents respectively. Harry L. Gormley, Keystone-Lawrence Transfer & Storage, New Castle, Pa., is treasurer and William M. Pritchard, Coastal Tank Lines, York, secretary.

Safety Figures Improve

A marked improvement in safety on the highway has been noted for the
(TURN TO PAGE 242, PLEASE)

GUMOUT
"on-the-engine"
carburetor cleaning
makes trucks run better

Pennsylvania Refining Company
2686 Lisbon Road
Cleveland 4, Ohio

**TAIL PIPE HANGER
ASSEMBLIES**
for FORD '49 thru '52

Wohlert
CORPORATION
LANSING 5, MICHIGAN

**HUNTER
Cargo Cooler**

DEPENDABLE REFRIGERATION AT LOW COST
HUNTER MANUFACTURING CO.
1550 E. 17TH ST., CLEVELAND 14, OHIO

FRAM } *for*
filters } *your*
BEST } *fleet*

FRAM CORPORATION
Providence 16, R. I.



**SADDLE TANK
CYLINDER TANK**



SNYDER SAFETY TANKS

All three Snyder Safety Tanks pictured here embody all the safety features that assure the utmost safety for the fleet operator, driver and cargo.

Snyder "Balanced Construction" design, insures lighter weight, streamlined yet stronger tanks...

TOOL BOX UNIT



Underwriters Laboratories, Inc.
INSPECTED

For catalog and address of your nearest dealer, write:

SNYDER TANK CORPORATION

P. O. Box 14, Buffalo 5, New York

P. O. Box 2390, Birmingham 1, Ala.

BE SURE THAT YOUR TRAILER HAS THE

REYCO
EQUALIZED WEIGHT DISTRIBUTION

*that only
the*

REYCO

*suspension
can provide!*

**ONLY A GENUINE REYCO
PERFORMS LIKE REYCO...**

so don't accept a suspension unit just because it is
claimed to be a "Reyco-type" tandem. Reyco has never
been imitated with complete success!

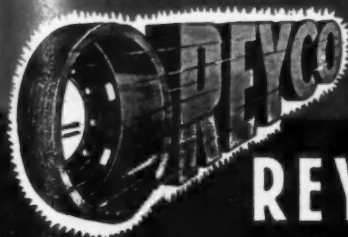


THE REYCO TANDEM IS AVAILABLE
AS ORIGINAL EQUIPMENT
ON AMERICA'S
HIGHEST QUALITY TRAILERS

Your present truck or trailer easily con-
verted to the Reyco patented suspension!
See your local truck or trailer dealer.

Get rid of present equipment headaches—
write us for descriptive literature and name
of your nearest Reyco dealer.

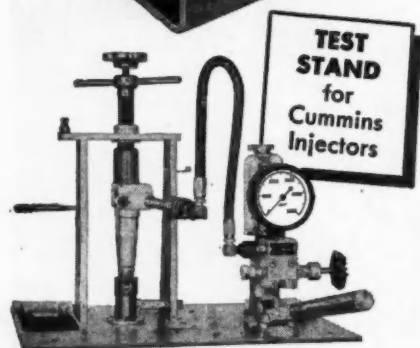
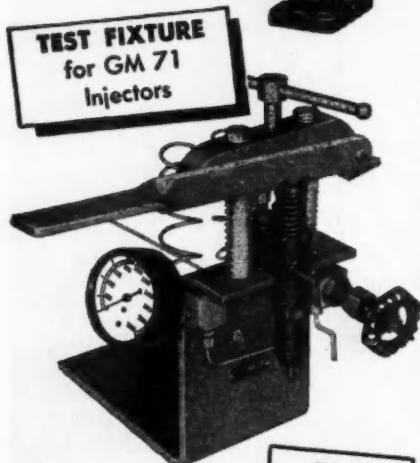
FACTORY SALES AND SERVICE COAST TO COAST



REYNOLDS MANUFACTURING CO.

SPRINGFIELD, MISSOURI

Essential TESTING INSTRUMENTS



Other Diesel Service Equipment:

- EXHAUST GAS METERS
- NOZZLE CLEANING KITS
- VALVE LAPPING BLOCKS

BACHARACH INDUSTRIAL INSTRUMENT COMPANY
7000 Bennett Street, Pittsburgh 8, Pa.

Send complete information on your Testing Instruments and Cleaning Tools

Name.....

Company.....

Address.....

WATER PUMPS

For all cars, trucks, buses, and industrial engines.

REBUILT

by factory methods

GUARANTEED SERVICE

equal to New

Send in your old units

PARTS SPECIALTIES CO.

5984 Lincoln Ave., Detroit 8, Michigan

CCJ News Reports

Continued from Page 240

truck and bus industries by the American Fidelity & Casualty Co., Richmond, Va., insurance underwriters. A marked drop of 12 per cent in the number of accident claims filed for the first third of the year which involved a truck or bus was included in the report. Of this group, the report indicated, the carriers insured by American have traveled 108,000 miles per accident compared with 65,000 last year.

Easy on the "Yes"

Government loans for expansion of terminal facilities and warehouses have been few and far between. Biggest reason is that government standards have been hard to meet in most cases. On the other hand, the government has been pretty generous when it came to handing out fast tax write-off certificates approved against 94 denied. Approvals covered \$30,000,000 in construction.

ATA's New Counsel

Col. James F. Pinckney, Alexandria, Va., formerly chief, Section of Complaints, ICC Bureau of Motor Carriers, has been appointed general counsel of the American Trucking Associations, Inc., to succeed Edgar S. Idol, whose resignation became effective June 30.

END

Please Resume Reading Page 37

CLASSIFIED ADVERTISEMENT

FLEET EQUIPMENT SPECIALISTS—With many years of experience—To represent manufacturers of truck and bus vehicle accessories, maintenance tools and equipment. Prepare marketing surveys in the fleet field on behalf of manufacturers to determine the acceptance or improvement of their products. Assist operators in planning new or additional garage or repair shop facilities. Assist in preparation of special literature, trade paper advertising, editorial. Territory New York City to Baltimore, the middle Atlantic Seaboard Area. Are you interested? Write GEORGE FREY ASSOCIATES, 2027-B Cheltenham Ave., Philadelphia 17, Pa.

FRINK SNO-PLOWS

Both "V" TYPE and ONE WAY BLADE TYPE

hand or power hydraulic control

FOR ALL MOTOR TRUCKS FROM 1½ to 10 TONS

FRINK SNO-PLOWS, INC., CLAYTON, 1000 IN. N.Y.
DAVENPORT-BESLER CORP., DAVENPORT, IOWA
FRINK SNO-PLOWS OF CAN. LTD., TORONTO, ONT.

HEAVY DUTY MOTOR TRUCKS

GASOLINE ELECTRIC GENERATING SETS

DUPLEX

TRUCK COMPANY
LANSING, MICHIGAN



WELD IT!



Write today for free illustrated 44-page booklet

"Guide to Better Welding"

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MANUFACTURING CO., INC.
307 E. Hennepin Ave. Minneapolis 14, Minn.

FIRST IN { APPEARANCE
ECONOMY
DURABILITY

Permalux
FINER DECALCOMANIA
MADE WITH DuPont "DULUX"

THE PERMALUX CO.
500 Rathbone Ave.
Aurora, Ill.

WRITE TODAY FOR DETAILS

GOOD YEAR ALL-NYLONS

NOW PRICED NEARER THAN EVER TO REGULAR TRUCK TIRES

—now bring you still lower
cost-per-mile!

The news is big and the news is good from Goodyear:

Now, for only slightly more than today's regular prices, you can get Goodyear All-Nylons—the super-stamina truck tires that stand up and “take it” where other tires can't.

Now, with the price difference between regulars and All-Nylons at the lowest figures ever, you can get still lower cost-per-ton-mile with Goodyear All-Nylons.

Every truck operator now using All-Nylons will tell you that no other tire can touch them for bed-rock cost-per-mile. That's because All-Nylons are stronger—lighter—tougher—more heat-resistant—and they take more recaps.

And note this: *truck owners find heat and bruise blowouts practically unknown with Goodyear All-Nylon truck tires.*

So if your tires now fail from bruise blowouts before treads wear out—if your operation punishes tires so severely they can't take recaps—if your tires lack stamina to resist excessive heat or the punishment of “murder runs”—if “extra tread” tires of standard construction have proved unsatisfactory in the past—and if you want more recaps—try All-Nylons!

Now that these sensational Goodyears are so close in price to regular tires, they're even greater cost cutters than ever before—because they last far longer and take more recaps. Call your Goodyear man for his recommendation.

Hi-Miler, Xtra Tred—T.M.'s The Goodyear Tire & Rubber Company, Akron, Ohio



NYLON
HI-MILER
SPECIAL

EVERY PLY IS A NYLON PLY



NYLON
HI-MILER
XTRA TRED

Why you'll cut costs with ALL-NYLONS

STRONGER. Nylon fibers, weight for weight, are stronger than steel, result in super-strong bodies.

LIGHTER. Nylon cords are not only stronger, but also thinner, and far more heat-resistant, than other cords—so tires are lighter, more flexible, last longer.

TOUGHER. Greater strength of nylon cords results in a tire better able to resist blows, bruises, any kind of punishment.

AND THEY TAKE MORE RECAPS!

GOOD YEAR

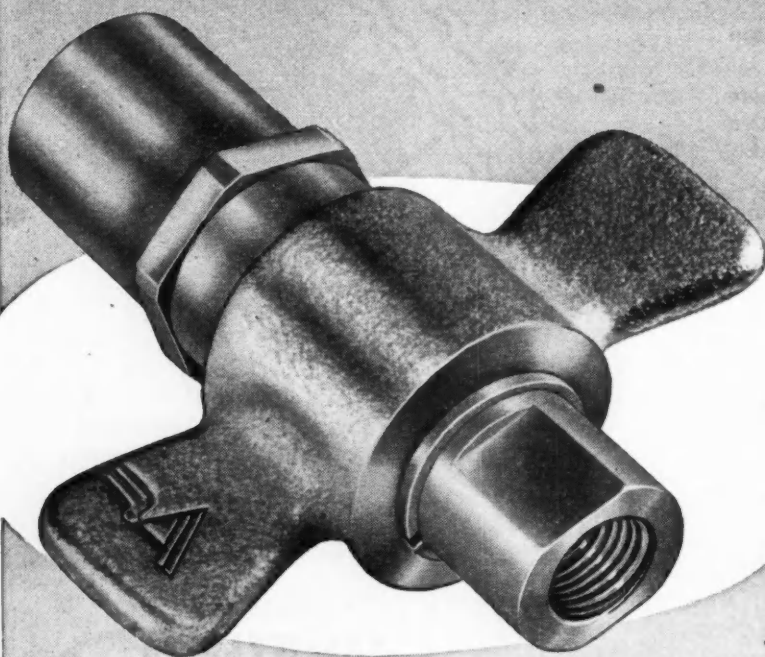
MORE TONS ARE HAULED ON GOODYEAR TIRES THAN ON ANY OTHER KIND

COMMERCIAL CAR JOURNAL, August, 1952

AEROQUIP SELF-SEALING COUPLINGS AND FLEXIBLE HOSE LINES

Speed Maintenance

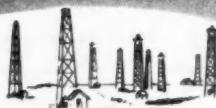
WHEREVER FLUID-CARRYING LINES
MUST BE DISCONNECTED AND RECONNECTED



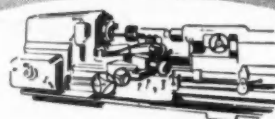
BUSES AND TRUCKS



RAILROADS



OIL FIELD DRILLING RIGS



MACHINE TOOLS



MATERIALS HANDLING TRUCKS

Speed maintenance, speed repair operations and speed interchanging of accessories joined by fluid-carrying lines with Aeroquip Self-Sealing Couplings. Lines may be separated in a few seconds without loss of fluid. No air enters the system upon reconnection. There is no need to drain or prime the fluid system. One Self-Sealing Coupling takes the place of two shut-off valves.

Aeroquip

AEROQUIP CORPORATION, JACKSON, MICHIGAN

SALES OFFICES: BURBANK, CALIF. • DAYTON, OHIO • HAGERSTOWN, MD. • HIGH POINT, N. C. • MIAMI SPRINGS, FLA.
MINNEAPOLIS, MINN. • PORTLAND, ORE. • WICHITA, KAN. • TORONTO, CANADA

AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U.S.A. AND ABROAD

FOR

"economical
and efficient
operation"



May 16, 1951

AC Spark Plug Division,
General Motors Corporation,
Flint 2, Michigan

Gentlemen:

For many, many years we have
been using AC Spark Plugs in
our fleet of trucks.

We have found that AC Plugs
give us an economical and
efficient operation. Also,
AC Plugs have a very long life.

Very truly yours,
GEORGIA HIGHWAY EXPRESS, INC.

H. L. Spring
By: H. L. Spring
Vice President
and General Mgr.

HLS/c

AUTHORIZED G P E C AND I C C COMMON CARRIER



PATENTED
CORALOX
INSULATOR



AC

SPARK
PLUGS

SHOWN ABOVE, J. J. Bunn,
Superintendent of Operations,
Georgia Highway Express,
Inc., enters the cab of one of
the mammoth fleet of trucks.
All 270 vehicles use AC Spark
Plugs exclusively.

Georgia Highway Express, Inc., operat-
ing 270 vehicles in heavy city traffic, on
treacherous mountain roads and over
long, level straightaways, use AC Spark
Plugs exclusively.

AC Spark Plugs with patented CORALOX
Insulator fire better . . . stay cleaner . . .
last longer. And, because of their utmost
reliability, ACs save you money.

Why don't you standardize on ACs for
all of your vehicles?

AC SPARK PLUG DIVISION



GENERAL MOTORS CORPORATION

Better because



*Surpasses
S.A.E.
Specifications*



★ You can depend upon WAGNER QUALITY because Wagner products are used as original equipment by automobile, truck and trailer manufacturers.

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LOCKHEED HYDRAULIC BRAKE PARTS and FLUID • NoRel • CelMex BRAKE LINING • AIR BRAKES



DUGAN BROTHERS
OF NEW JERSEY, INC.

"Bakers for the Home"

635 N. 3RD STREET NEWARK 2, NEW JERSEY
TEL. HUNTSBURY 8-0000

June 4, 1952

Champion Spark Plug Company
Toledo 1, Ohio

Gentlemen:

As "BAKERS FOR THE HOME" we have served the folks in this section of the country for nearly three quarters of a century.

Today we operate a fleet of over 1800 trucks covering the areas of L. I., N. J., Greater New York, New York, Philadelphia and part of Connecticut. We feel that much of the success of our present day operation can be credited to the rapid and efficient transportation of our famous baked goods to the many communities we serve.

Although the trucks in our fleet are of various makes and sizes, our experience has shown that "across the board" Champion Spark Plugs deliver the most dependable service at the lowest cost.

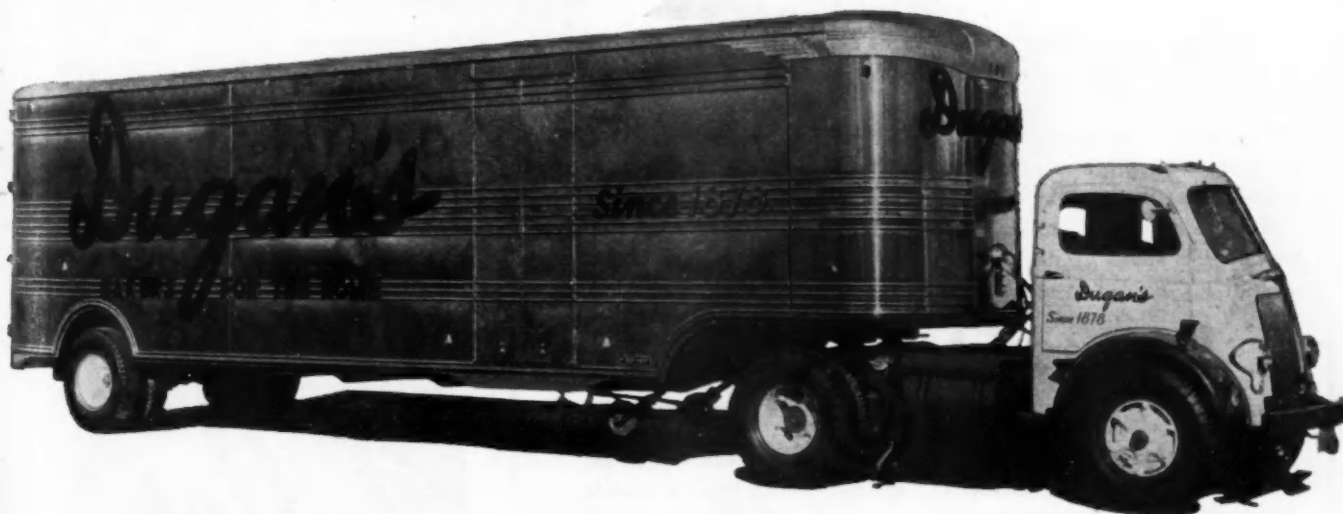
That is why we are using Champions exclusively in our entire fleet.

Frank C. Runtz

Superintendent of Transportation



**Where Dependability Is Paramount
You'll Find Champions On The Job!**



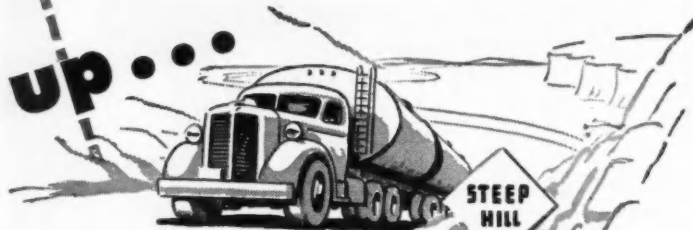
Standardize on

CHAMPION

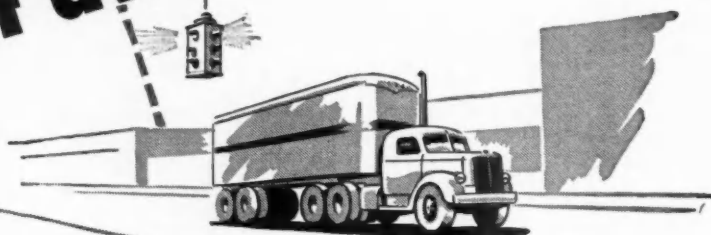
for Your Fleet

CHAMPION SPARK PLUG COMPANY, TOLEDO 1, OHIO

First up...



First away...



10 speeds forward

Without gear splitting

You'll think there is a "souped up" engine under the hood the first time you drive a big rig equipped with a Fuller ROADRANGER. For this transmission really puts horsepower to work.

Gear-splitting is entirely *eliminated*. Shifts are simple, short, and fast, with only one power shift in the whole series. Yet you have 10 forward speeds—available in *equal*, progressive, selective steps, none exceeding 28%—to keep your engine *always* turning in its most efficient range.

With this transmission, there's no more engine lugging, no more low rpm between shifts. With the Fuller ROADRANGER, you can haul more, and maintain higher average speeds than ever before—with so much better utilization of horsepower that you make $\frac{1}{3}$ fewer shifts:

Ask the man who has driven one. He'll tell you that with *one lever controlling 10 speeds*, he's always *first up* the steep grade, *first away* in city traffic. Write today for full information on the new Fuller ROADRANGER.



Fuller Roadranger

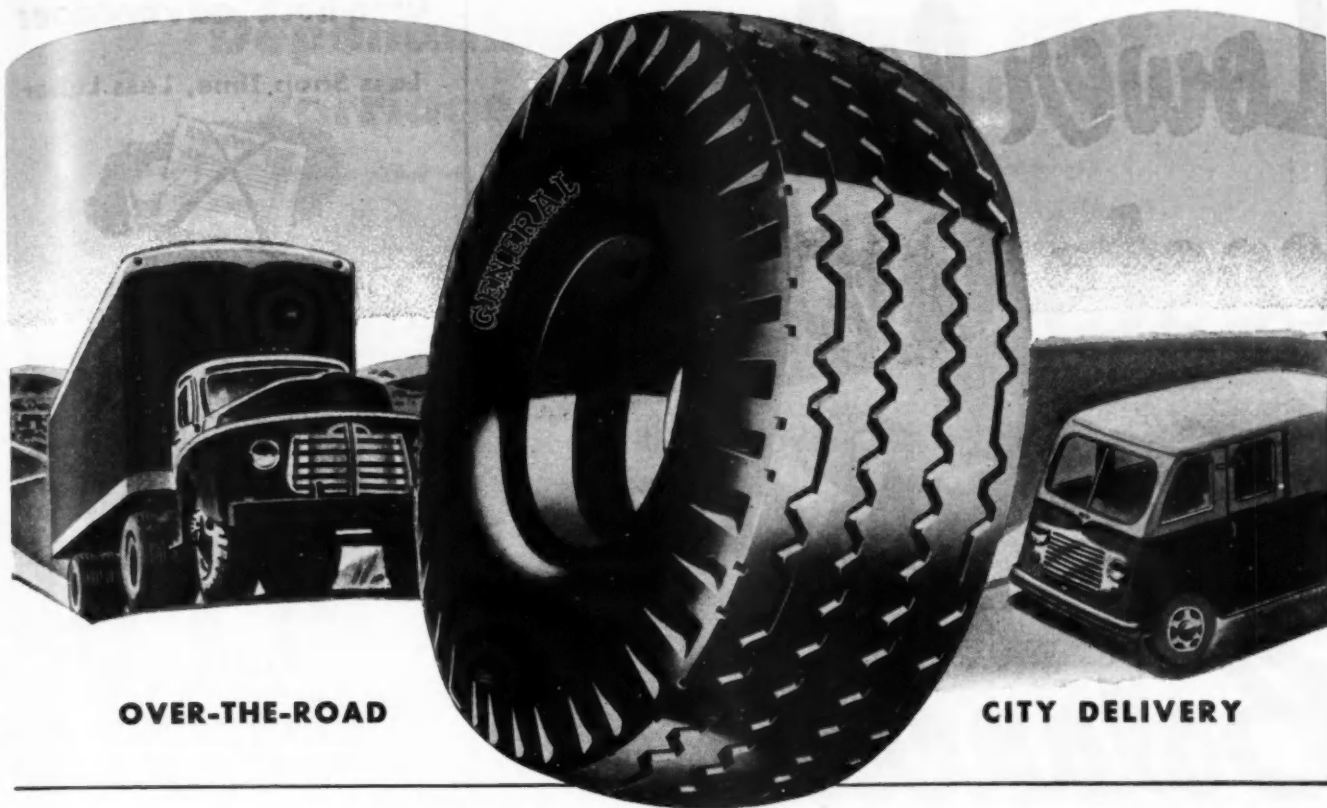
You shift 1-2-3-4-5 with the new Fuller ROADRANGER Transmission. Then, you push or pull the range selector button, shift through neutral and go

right back through the series for 6-7-8-9-10. Yes, 10 speeds forward with no gear splitting. Straight shifts all the way. That's the Fuller ROADRANGER.



FULLER MANUFACTURING COMPANY (Transmission Division), KALAMAZOO 13F, MICHIGAN

Unit Drop Forge Division, Milwaukee 1, Wis. • WESTERN DISTRICT OFFICE (SALES & SERVICE—BOTH DIVISIONS), 1060 E. 11th Street, Oakland 6, Calif.



More, Low Cost Original Miles on

GENERAL TRUCK TIRES

Whether you do inter-state over-the-highway hauling or intra-city door-to-door delivery, the objective is the same . . . *more deliveries for more profit.* To improve your profit picture—to get more, safer original and recap miles at lower cost, insist on General Truck Tires. More miles of rayon cord plus a special shock-absorber construction means longer tire life . . . far lower cost-per-mile than you've ever experienced before. See your General Tire Dealer today!

Plus More RECAP Miles
with General's Factory-Controlled
Kraft System Recap Miles

Factory trained tire experts using factory-controlled methods and highest quality General Tire camelback can put the new General Truck Tire tread of your choice on worn tires. Kraft System Recapping means extra thousands of low-cost recap miles . . . plus miles for extra profit.



**THE
GENERAL
TRUCK TIRE**

The General Tire & Rubber Company • Akron, Ohio

SPECIFY GENERAL TIRES ON YOUR NEW EQUIPMENT

Lower labor costs with Grey-Rock Balanced Brake Blocks and Linings

Grey-Rock

BALANCED
TRUCKSET LININGS
BALANCED
BRAKE BLOCKS

R
M

GREY-ROCK DIVISION of Raybestos-Manhattan, Inc., MANHEIM, PA.

RAYBESTOS-MANHATTAN, INC., Manufacturers of Brake Linings • Brake Blocks • Clutch Facings • Fan Belts • Radiator Hose • Packings • Industrial Rubber Products • Rubber Covered Equipment • Asbestos Textiles • Sintered Metal Products • Abrasive and Diamond Wheels • Bowling Balls

Grey-Rock advantages

Less Shop Time, Less Labor



In Grey-Rock blocks and linings, we give you combinations of *different* friction materials scientifically balanced for every make and model. Result: smoother, more positive brake action, without grab, dive or fade. Fewer adjustments are needed. All this means less downtime, with a substantial saving of high-cost labor.

Longer Life for Linings and Drums



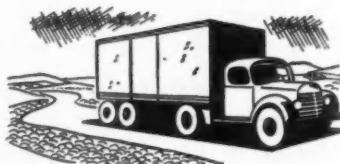
This is due to the smoother action of *balanced* sets. With Grey-Rock, you get extra thousands of miles between relines. And you help avoid costly drum replacement.

Lower Maintenance Costs



Thanks to the "balance" principle, pioneered by Grey-Rock 20 years ago, there's less wear-and-tear on tires, transmissions and axles. It's not in brakes alone that Grey-Rock helps save money!

Less Driver Fatigue

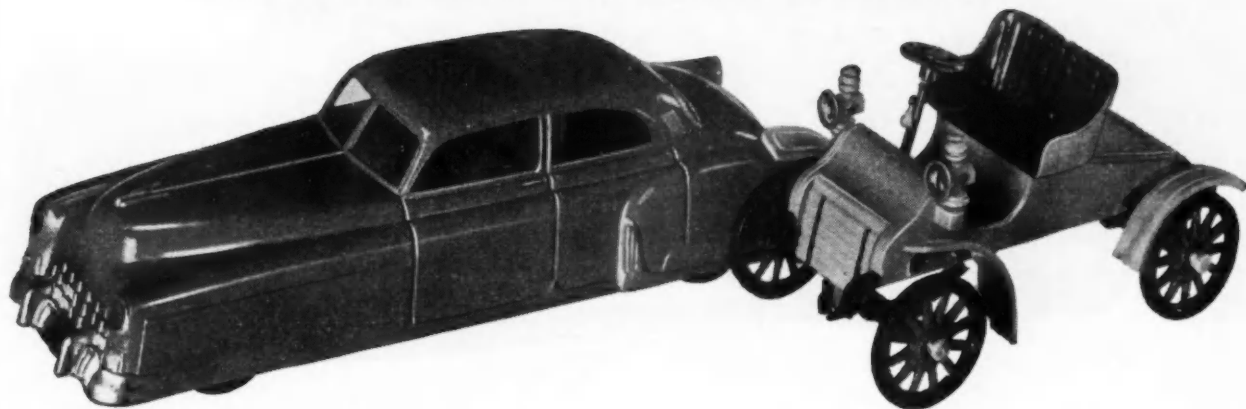


Drivers report smooth, certain stops from the moment the job leaves the shop. This means more confidence at the wheel . . . less fatigue! Ask your jobber for Grey-Rock Balanced Trucksets for light and medium trucks, and Grey-Rock blocks for the heavies.



Dependable performance since carriages became horseless

(Another reason why TIMKEN® bearings are first choice with truck manufacturers)



Way back in 1899, the St. Louis Motor Car Company equipped a car with Timken® roller bearings. It was the first car to roll on Timken bearings and it's still in running condition.

Since then, millions of cars, trucks and buses have been equipped with Timken tapered roller bearings. These bearings have set an unequalled record of dependable performance during the 53 years they have been used by the automotive industry. This record is due largely to the four big advantages of Timken bearings: 1) advanced design, 2) precision manufacture, 3) rigid

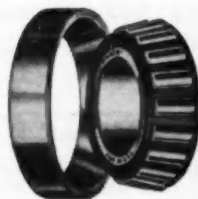
quality control, 4) special analysis steels.

Their record for dependable performance is one reason why Timken bearings are first choice with truck manufacturers. And this same record is a big reason why it pays to make sure the bearings you use for replacement carry the trade-mark "Timken".

FREE BOOKLET. Write on your company letterhead for your copy of "Timken Tapered Roller Bearings, Their Care and Maintenance". Dept. JC-8, The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

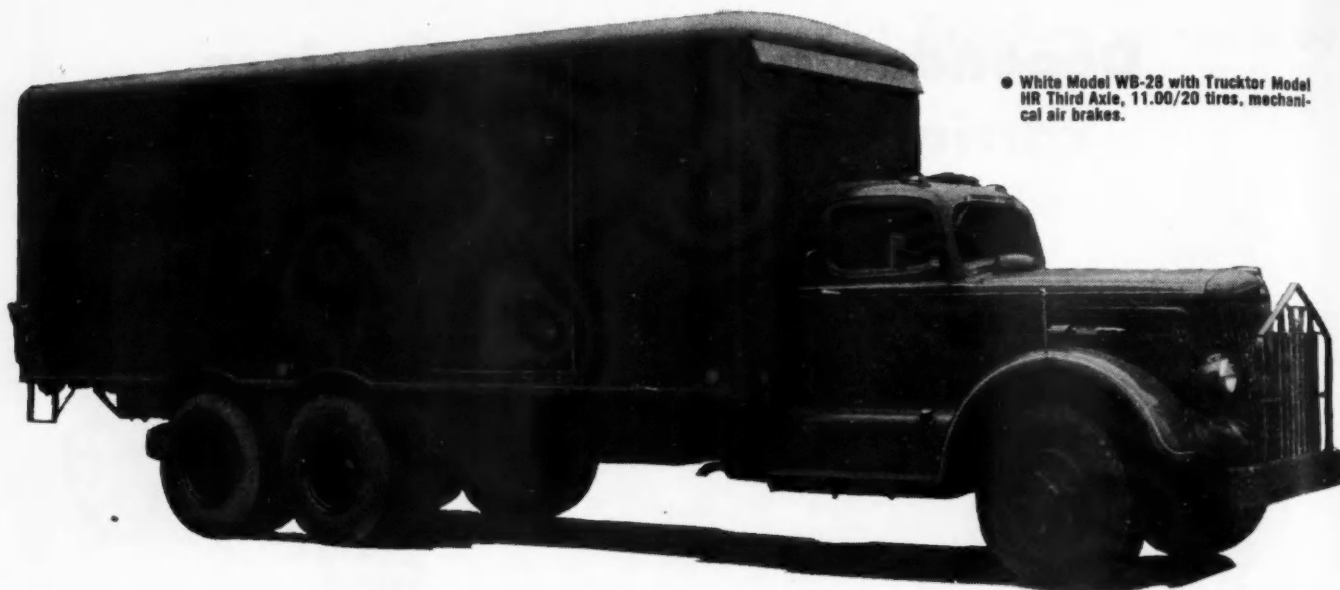
SINCE THEY'RE BEST WHEN THE TRUCK IS NEW, THEY'RE BEST FOR REPLACEMENT, TOO!

TIMKEN
TRADE-MARK REG. U. S. PAT. OFF.
TAPERED ROLLER BEARINGS



NOT JUST A BALL ○ NOT JUST A ROLLER □ THE TIMKEN TAPERED ROLLER □ BEARING TAKES RADIAL AND THRUST → ○ ← LOADS OR ANY COMBINATION

COMMERCIAL CAR JOURNAL, August, 1952



• White Model WB-28 with Trucktor Model HR Third Axle, 11.00/20 tires, mechanical air brakes.

White Van Models Carry More When Converted With

More packaged goods . . . chemicals and by-products . . . grain, feed, fertilizer . . . farm and dairy produce, etc. *Whatever* the make or model, your present or new 4-wheel trucks will haul *more* per trip with Trucktor Trailing Axles.

Trucktor "Extras". And—with "Truck-Mated" Trucktor you not only greatly increase payloads, but get all these *extra* advantages:

Less Strain on Truck Frame—6-Point frame support distributes increased loads, braces frame, provides support points behind the last axle.

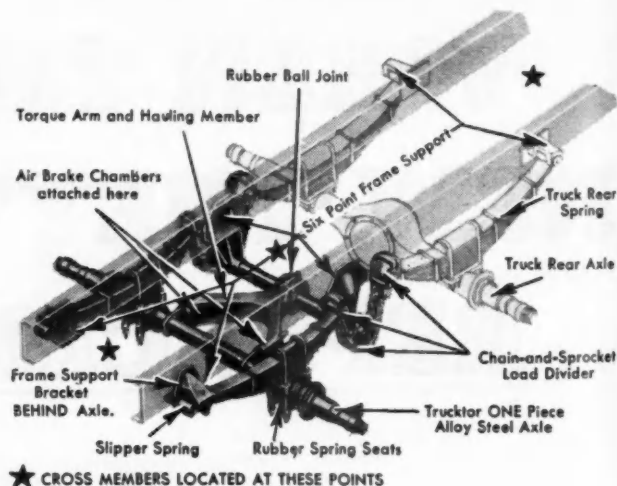
More Stable Ride—two extra springs carry extra load smoothly, safely — provide lower center of gravity, greater flexibility, less side sway.

Cash In on this profit-making combination of *big* payloads and *unique* advantages. Convert your present or new 4-wheel trucks or tractors with **Trucktor Trailing Axles!**

Perfect Tracking—springs ride "free" through Chain-and-Sprocket Load Divider—unique yoke arrangement hauls the trailing axle, absorbs all braking torque!

Less Maintenance—simple, rugged, fewer working parts. Spring seats and yoke head rubber mounted. Only 8 lubrication points.

Trucktor
"Truck-Mated"
3rd AXLES



★ CROSS MEMBERS LOCATED AT THESE POINTS

For further information, call or write your Truck Dealer, Trucktor Distributor, or

THE TRUCKTOR CORPORATION
Route 29 Mountainside, New Jersey

Safety IS NO ACCIDENT — 6-Wheelers ARE SAFER!

TRUCKTOR Detachable Chain-and-Sprocket 4-WHEEL DRIVE



Makes tire chains unnecessary. When extra traction is needed, sprocket chains are slipped over sprockets and pinned. Attached and detached quickly, simply, without removing wheels (in picture, wheel removed to show construction.)

FROM THE RECORDS OF A DALLAS TRUCK OPERATOR

Average rate per 100 lbs.
Increased payload per vehicle with Prior OB-Round
Integral Step Safety Tanks . . . 500 lbs.
@ \$1.33 per 100 lbs. . . . daily
Average monthly operation, 25 days
Monthly increase per unit
Utilize increased payload 60% of time
Monthly increase per unit
Yearly increase per unit
65 units in operation per month
Yearly increased revenue
Original investment in tanks
and installation costs

\$1 33

6 65

166 25

99 75

1,197 00

6,483 75

77,805 00

\$13,000 00

**INCREASED
REVENUE**

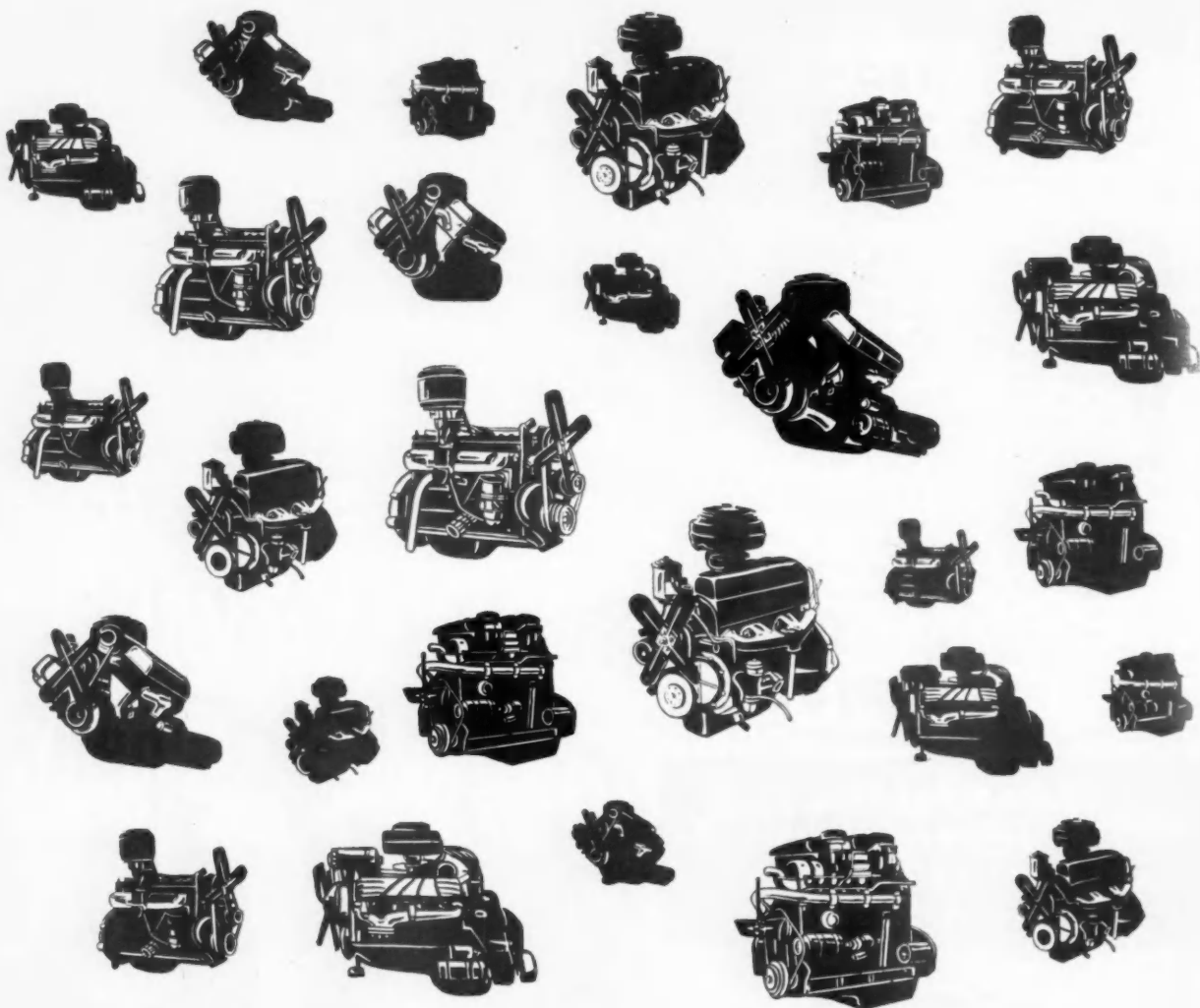
Underwriters Laboratories, Inc.
**INSPECTED
AUTOMOTIVE FUEL TANK**
No. A-11498



Prior
OB-ROUND
INTEGRAL STEP
SAFETY TANKS

According to Mr. Ben Mason, Vice President in charge of Maintenance and Purchasing for Southern Express, Inc., Dallas, Texas, the new Prior Step Tanks are effecting a \$77,805.00 yearly revenue by merely transferring 500 pounds weight to the underloaded front axle of the units, thereby increasing the payload. You can make substantial savings, too, with Prior OB-Round Step Tanks. It will pay you to get the facts. Write...

PRIOR PRODUCTS, INC.
BOX 7608, DALLAS, TEXAS
BOX 349, MIDDLETOWN, OHIO



25 out of 27 leading engine manufacturers using chrome rings as original equipment specify PERFECT CIRCLES!

Perfect Circle chrome rings are preferred by engine manufacturers because of performance.

And, in replacement service, Perfect Circle's 2-in-1 Chrome Set has also established new standards of piston ring performance. The thick solid chrome plating on the top compression rings and oil ring rails more than doubles the life of pistons, cylinders and rings. What's more, 2-in-1 is the only set that provides a choice of expander springs to assure positive oil control regardless of cylinder condition.

There's no tedious break-in period with 2-in-1 Chrome Rings—they are factory lapped for quick, positive seating.

As a Doctor of Motors, you can't afford to settle for less than the best—and the best is 2-in-1! Perfect Circle Corporation, Hagerstown, Indiana; The Perfect Circle Co., Ltd., Toronto, Ontario.

Solid chrome protects these wearing surfaces. Normal pressure and alternate HiPressure springs (for badly worn cylinders) packed with each oil ring.



Perfect Circle

The Standard of Comparison

better heavy-duty motor oil



Greater protection for your harder-working engines

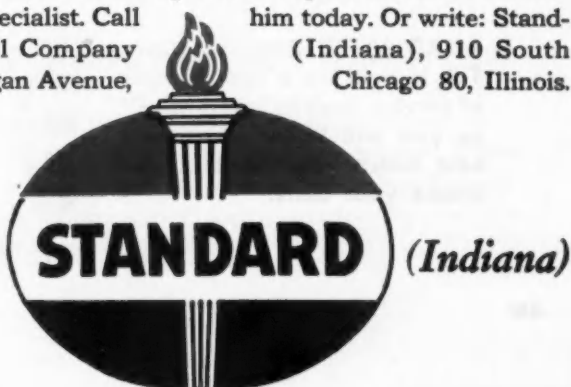
• New and better STANOLUBE HD-M Motor Oil is an improved additive-type lubricant that combines more effective detergent-dispersant action with greater oxidation stability. Result: greater protection for commercial and military trucks, busses, and construction equipment ... greater protection for *your* harder-working engines.

More effective detergent-dispersant action and greater oxidation stability, proved by laboratory tests and confirmed in extensive field service, mean that engines stay cleaner under the toughest of operating conditions. Freedom from deposits means less engine wear, longer periods between overhauls, and lower maintenance costs. New STANOLUBE HD-M also offers the

same bearing corrosion resistance and freedom from foaming which helped make STANOLUBE HD a preferred lubricant for heavy-duty applications during the past nine years.

Your nearby Standard Oil service-supply center stocks STANOLUBE HD-M for fast *local* delivery. This service-supply center is headquarters for your Standard lubrication specialist. Call him today. Or write: Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

STANDARD OIL COMPANY



on **top** of the **highway** problem

THE LEE 5-RIB "HIGHWAY"



Road-rated for
"all 'round
trucking service"

Sure, it's true! You, and all the trucking industry make up the greatest transportation system in the world. And, in miles, the nation's highway system also is the world's greatest. But some of those roads were built decades ago—and all vary in style, size and surface. To keep schedules up, costs down, *and make money*, on such a system is tough. Someday, perhaps, our highways will catch up with our needs—but right now, to help you make the best of a bad situation, here is the new Lee 5-Rib "Highway" Tire:—

- its remarkably wide ribs put more rubber on the road for longer, safer mileage. Tread wear is exceptionally even because squeegee action is controlled.
- its wide angles between the ribs are engineered

to squeeze out (instead of pick up) trouble-making stones, pebbles, glass fragments and other mileage murderers.

- its typical Lee carcass is built to take one recap after another to stretch extra miles into profitable dollars.

From the broadest, smoothest highway of tomorrow to the narrowest, roughest road of yesterday, this Lee 5-Rib "Highway" will roll your trucks for the tops in over-all mileage and the bottom in over-all cost.

Details? Write us a letter—or use the coupon below! Clip it! Sign it! Mail it!—**NOW!**

© 1952

THE ROAD-RATED LINE

ROAD-RATED: Every Lee Truck Tire is built for a specific type of service. Each is "road-rated" so you will know which will best match your needs...decrease your costs.

FREE!

LEE RUBBER & TIRE CORPORATION
Conshohocken, Pa.

Please send me free copy of book "HOW TO ROTATE TRUCK TIRES AND GET EXTRA SERVICE" and information on Lee "Road-Rated" Truck Tires.

Name.....

Address.....

Company.....



Operation Ready-Mix

Has a New Payload Standard

HOW can your trucks handle bigger loads...do more work...make tighter schedules...keep operating costs down?

The answer, of course, is *White Specialized Design*, tailored to today's tough operating conditions in the busy construction industry...and everywhere there is a specialized transportation job to do.

White builds to most efficient production standards and specifications, yet is engineered to your exact operating needs. That's why Whites look good in day after day service and in your cost records...year after year.

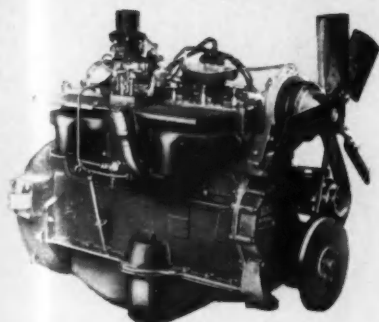
THE WHITE MOTOR COMPANY • Cleveland 1, Ohio



FOR MORE THAN 50 YEARS THE
GREATEST NAME IN TRUCKS

MATERIAL SERVICE CORP., CHICAGO, BOOSTS PAYLOAD WITH WHITES

A fleet of sturdy White six-wheelers keeps on the move for Material Service Corp., in the Chicago area...helping to haul 2½-million tons of Ready-Mix per year. White *Specialized Design* saves weight...adds earning power...assures efficient, economical service on the rugged hauling jobs for Material Service Corp.



More Power... More Earning Power with White Engines

ENGINEERED right for today's operating conditions, White Engines earn more...save more. High-compression, high output and rugged, White Engines make possible maximum payloads within highway weight limits because there's more power per pound of engine weight. Designed for maximum fuel economy and longer life, too!



All splash and no leak!

Even a small stream of water makes quite a splash when it hits glass. It gives you some idea of what happens when the myriad drops of a rain-storm hit a windshield or fixed window. That's where there *should* be Inland Self-Sealing Weather Strip. It's specially compounded rubber, permanently compressed by its own resilience. It's weather-tight and rattle-free!

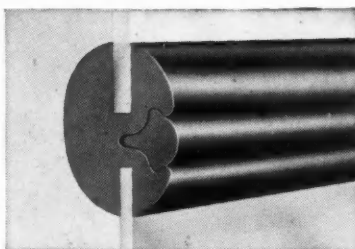
Replacing broken glass *takes time* with ordinary weather seals . . . keeps the vehicle out of profitable operation. But *not* with Inland Self-Sealing Weather Strip, which makes glass replacement a fast, one-man, low-cost job. Be sure to *specify* it!

INLAND MANUFACTURING DIVISION
General Motors Corporation • Dayton, Ohio

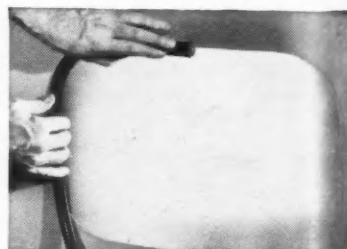


Self-Sealing Weather Strip

(PATENTED)



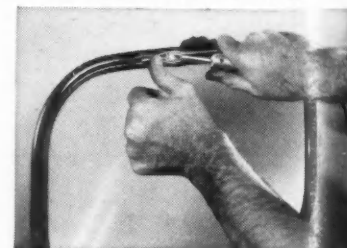
1. Cross-section of Inland Weather Strip.



2. Set the Inland Strip in the body panel.



3. Slip the glass into the Inland Strip.



4. Zip the filler strip into the channel.



MORE FLEETS USE SPEED WASH THAN ANY OTHER BRUSH



MILWAUKEE DUSTLESS BRUSH CO.
530 N. 22 STREET, MILWAUKEE 3, WISCONSIN

Please ship the following brushes:

QUANTITY	DESCRIPTION	PRICE	AMT.
	 NO. 240 OBLONG SPEED WASH, 11" back, for heavy duty trucks, trailers & busses, complete with 5' handle.	\$12.45	
	 NO. 290 ROUND SPEED WASH, 5 1/2" Dia. back, for light trucks, passenger cars, complete with 5' handle.	\$12.45	

Name _____

Address _____

City _____

State _____

Thousands of fleet operators consistently choose "Speed Wash" over any other fountain brush because it's guaranteed to clean trucks better, faster, and easier than any other. You must be completely satisfied or your money will be refunded in full if the "Speed Wash" brushes you buy are returned within ten days. Order yours today on this money-back guarantee! Send check or money order for postpaid shipment.



MILWAUKEE DUSTLESS BRUSH CO.
530 N. 22 STREET, MILWAUKEE 3, WISCONSIN

COMMERCIAL CAR JOURNAL, August, 1952

Announcing the great new

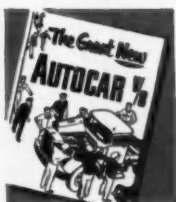
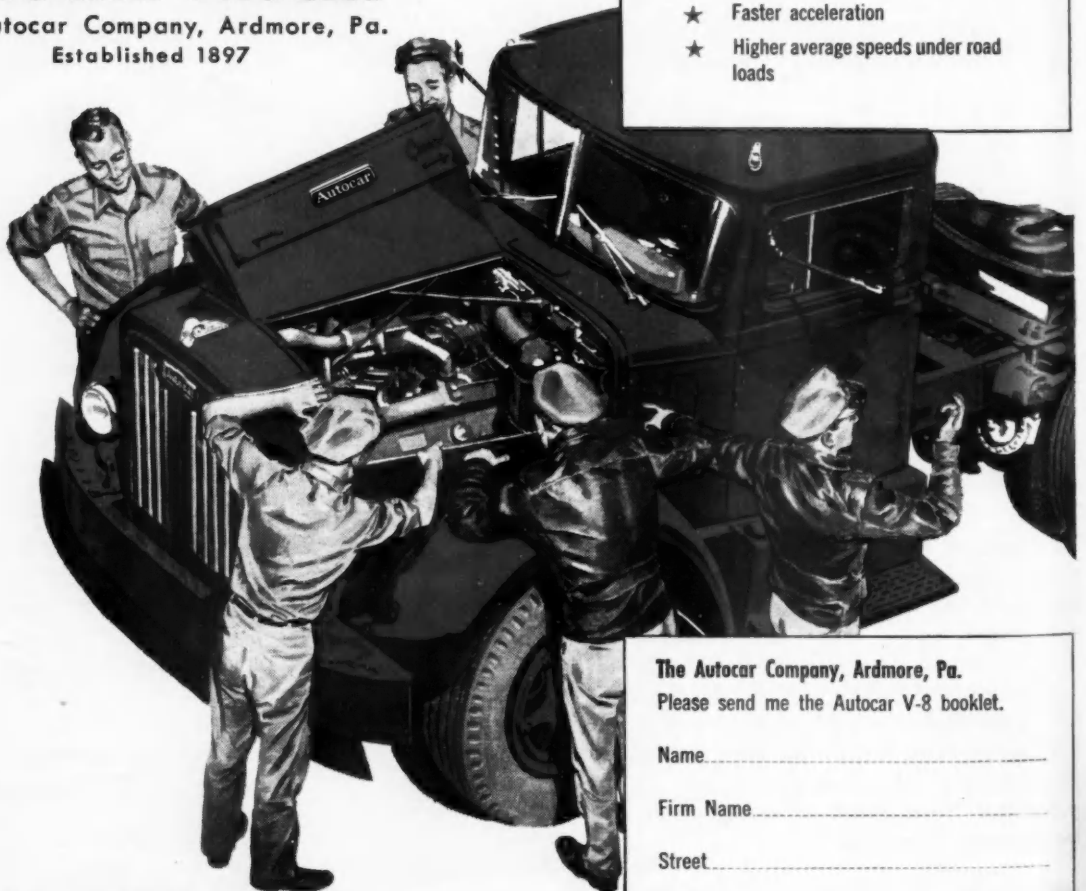
AUTOCAR V-8

with advanced design, overhead valve V-8 engine. The first V-8 for heavy-duty highway hauling!

Here it is! And only Autocar has it. A brand-new, heavy-duty highway tractor powered by the first V-8 engine ever offered to the heavy-duty highway hauling industry. It's a modern unit for modern highway hauling — a smooth performer under your profitable payloads.

AUTOCAR TRUCKS

The Autocar Company, Ardmore, Pa.
Established 1897



Send for this illustrated booklet.
It gives full details and specifications of the Autocar V-8.



Autocar V-8 features that result in smoother, more brilliant performance and lower operating costs:

- ★ A modern reduced-weight heavy-duty chassis
- ★ A modern high-compression, V-8 engine with valve-in-head design
- ★ 200-plus horsepower
- ★ Lowest weight-power ratio of all comparable engines.
- ★ Smoother running engine at all speeds
- ★ Faster acceleration
- ★ Higher average speeds under road loads

The Autocar Company, Ardmore, Pa.
Please send me the Autocar V-8 booklet.

Name.....

Firm Name.....

Street.....

City..... Zone..... State.....

let
HOOBLER
UNDERCARRIAGE

cut your trucking costs
 with
any type trailer



If you'd like to cut your operating costs, see how this unique Hoobler Undercarriage can help you. Because it allows the trailer to follow through behind the tractor . . . to ease around tightest corners . . . there's practically no tire scuffing. Actual records show as much as 250,000 miles per tire on the original treads!

That's just the start of the savings. The Hoobler 9-ft. axle spacing generally permits greater legal payloads. More goods can be hauled per trip, while maintaining as good or better schedules. Profit per trip goes up!

Loads ride safer, too. For Hoobler's flexible, multiple support does a better job of absorbing road bumps. There's minimum load shifting . . . no "weaving" on straightaways.

The Hoobler Undercarriage is making savings for truckers of many types of goods. It's simple in design and construction, quickly inspected and serviced. Used on high sides, tankers, vans and flat beds (28 ft. in length and over). Find out how it can save for you. For complete information, write The Union Metal Manufacturing Company, Canton 5, Ohio.



TANKERS



HIGH SIDES



VANS



FLAT BEDS

UNION METAL

DESIGNERS AND PRODUCERS OF STEEL PRODUCTS SINCE 1906

Builder of The Hoobler Undercarriage

BEFORE YOU BUY HYDRAULIC JACKS . . .

LOOK FOR THE SERVICE-PROVED SEAL

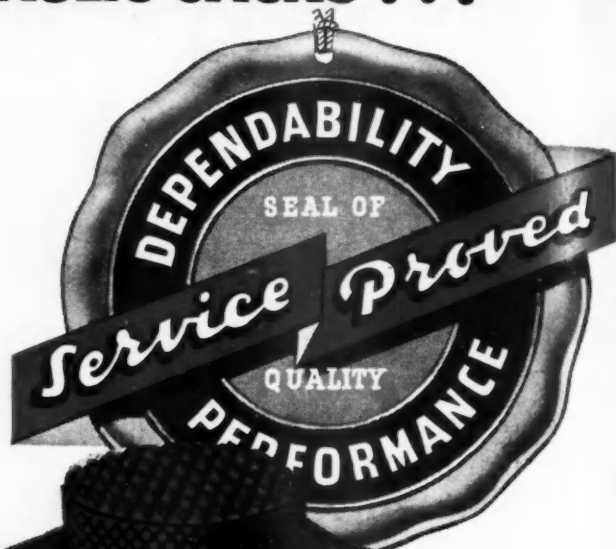
**You'll find it only on a
BLACKHAWK — the jack
predominantly used by
Bus Transportation
"Maintenance Efficiency"
winners 21 years in a row!**

Frame and axle machines give Blackhawk Jacks an exclusive "testimonial." *Every leading frame and axle straightener is Blackhawk-equipped* — because Blackhawk Hydraulic Jacks stand up under such continuously rugged work. Blackhawk gives you *every wanted feature* — designs are based on an unmatched range of experience in building jacks and other hydraulic equipment. So, don't settle for less — order Blackhawk today from your jobber!

**IN HYDRAULIC JACKS
YOUR
BEST BUY
IS A**

BLACKHAWK

A Product of BLACKHAWK MANUFACTURING CO., Dept. J-1182, Milwaukee 1, Wisconsin



MODEL
D8.7
12-TON CAP.

P. I. E. REPORTS:

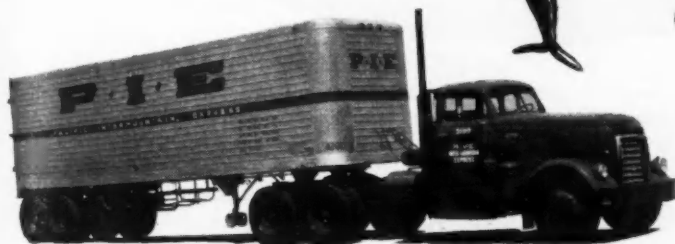
"We replace all oil seals at each preventive-maintenance inspection"

Pacific Intermountain Express, one of the nation's largest truck fleet operators, replaces all oil seals in an assembly during routine inspection and rebuild. National Oil Seals are stocked in P. I. E. shops to facilitate replacement. Superintendent of Fleet Maintenance Riesing says:

"Time and labor to remove, repair and reinstall assemblies which have malfunctioned is far more expensive than rigid preventive maintenance which includes new oil seals at each inspection. The dependability of National Oil Seals helps us maintain 150,000-mile inspection intervals. National seals are doing an outstanding job."

Whether you're operating hundreds of highway units like P. I. E. or a 3-unit local delivery service, service dependability is vital to your pocketbook. Do as America's leading fleets do—replace with new National Oil Seals every time an old seal is removed for any reason!

"Every time you take out an oil seal, replace it with a new National seal"



J. W. Riesing
Superintendent of Fleet Maintenance
Pacific Intermountain Express Co.



OIL SEAL STOCKS TAILORED FOR YOUR FLEET

For greater shop efficiency and less down time, let your parts jobber put in a National Oil Seal Stock, custom-tailored to your needs. He keeps the stock up—no extra work for you.

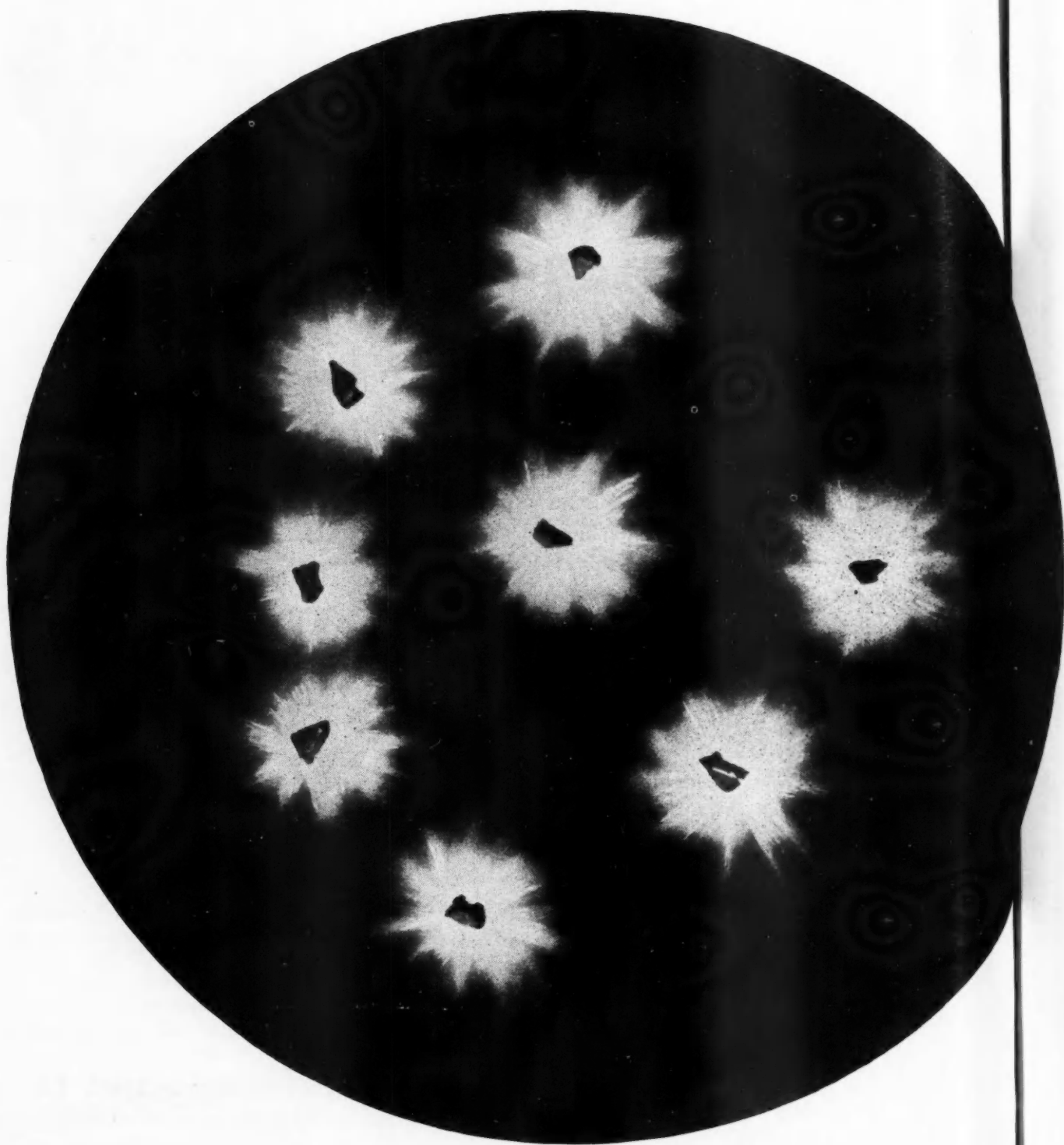
NATIONAL MOTOR BEARING CO., INC.

General Offices: Redwood City, Calif. Plants: Redwood City, Calif., Van Wert, Ohio



2442

THESE "STARS"



This drawing represents a greatly magnified drop of Delvac Oil taken from the crankcase of a test engine containing a radio-active piston ring. The white "stars" are radio-active metal particles worn off the ring during a test run.

With Delvac Oil, there are comparatively few particles. With ordinary heavy-duty motor oils, the particles are many times more numerous. This proves that today's Delvac Oils with super-detergent formula give vastly greater protection against low-temperature corrosive wear.

TELL A VITAL STORY

New Radio-Active Tracer Tests Prove Delvac Oils' New Super-Detergent Formula Cuts Engine Wear—Lowers Oil Consumption

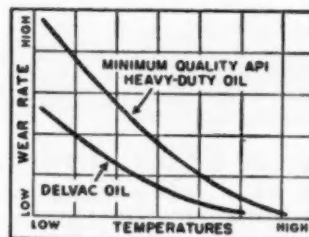
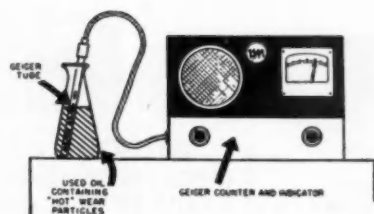
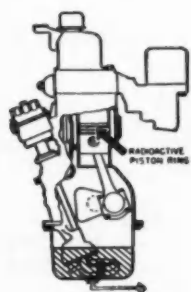
FROM TESTS with radio-active tracers taken from the atomic pile at Oak Ridge comes the proof:

Delvac Oils with new super-detergent formula sharply reduce wear during low-temperature operation *when most wear occurs* . . . during starts and warm-ups and stop-go driving. Less engine wear means longer engine life, fewer overhauls — lower fuel and oil consumption, too!

For additional protection, Delvac Oils also

provide other outstanding performance qualities. They resist oxidation and foaming, guard against corrosion, minimize formation of varnish, lacquer, sludge. They help your engines develop full power — help keep maintenance costs at rock bottom!

Call your Socony-Vacuum representative today for these improved, super-detergent Delvac Oils. They are recommended or approved by 125 of the country's leading engine and equipment builders.



Here's how the sensational wear-fighting properties of today's super-detergent Delvac Oils are proved:

Radio-active piston rings are installed in test engines. "Hot" metal particles, worn from the rings, are picked up by the motor oil. Radio-activity of this

oil, measured by Geiger counter, indicates *with amazing accuracy* amount of wear which occurs.

Chart above graphically shows result — an almost unbelievable reduction in wear!

DELVAC OILS

**Correct Lubrication
for Fleet Operators**



**THE FLYING RED HORSE COMPANIES: SOCONY-VACUUM OIL COMPANY, INC.
MAGNOLIA PETROLEUM COMPANY • GENERAL PETROLEUM CORPORATION**

COLE-HERSEE CO. THE ORIGINAL MANUFACTURER
OF CONNECTORS

HAS THE TYPE OF TRAILER CONNECTOR YOU WANT

4, 6 AND 7 POLE

**MANUFACTURED TO ENGINEERING STANDARDS
TWENTY SEVEN YEARS OF HONORABLE REPUTATION**

COLE-HERSEE PRODUCTS ARE FOUND ON MOST ORIGINAL VEHICLES

TRAILER PLUGS

SPLIT CLAMP TYPE SPLIT CLAMP TYPE — UNIVERSAL (FITS ALL SOCKETS).
PROTECTED CLAMP SCREWS — WIRE CODED INSERT — PRECISION MADE.



WITH CABLE PROTECTOR

7 POLE — No. 1255 (A.T.A. STANDARDIZED)

6 POLE — No. 1254

4 POLE — No. 1253



WITHOUT CABLE PROTECTOR

7 POLE — No. 1222 (A.T.A. STANDARDIZED)

6 POLE — No. 1236

4 POLE — No. 1233

TAPERED NUT TYPE UNIVERSAL — WIRE CODED INSERT — PRECISION MADE.



WITH CABLE PROTECTOR

6 POLE WITH LOCK COLLAR — No. 1177

4 POLE WITH LOCK COLLAR — No. 1176

6 POLE WITHOUT LOCK COLLAR — No. 1175

4 POLE WITHOUT LOCK COLLAR — No. 1174



WITHOUT CABLE PROTECTOR

6 POLE WITH LOCK COLLAR — No. 1199

4 POLE WITH LOCK COLLAR — No. 1193

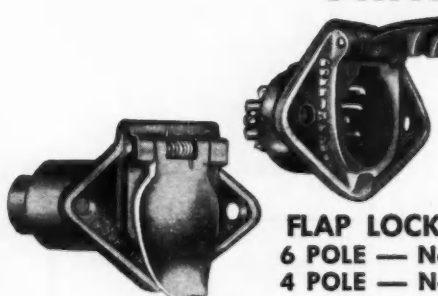
6 POLE WITHOUT LOCK COLLAR — No. 1196

4 POLE WITHOUT LOCK COLLAR — No. 1186

TRAILER SOCKETS

A.T.A. STANDARDIZED FLAP LOCK TYPE

7 POLE — No. 1221



FLAP LOCK TYPE

6 POLE — No. 1235

4 POLE — No. 1232



SCREW LOCK TYPE

6 POLE — No. 1198

4 POLE — No. 1192



SLIDE-AWAY TYPE

6 POLE — No. 1171

4 POLE — No. 1228



NON-LOCK TYPE

6 POLE — No. 1195

4 POLE — No. 1185

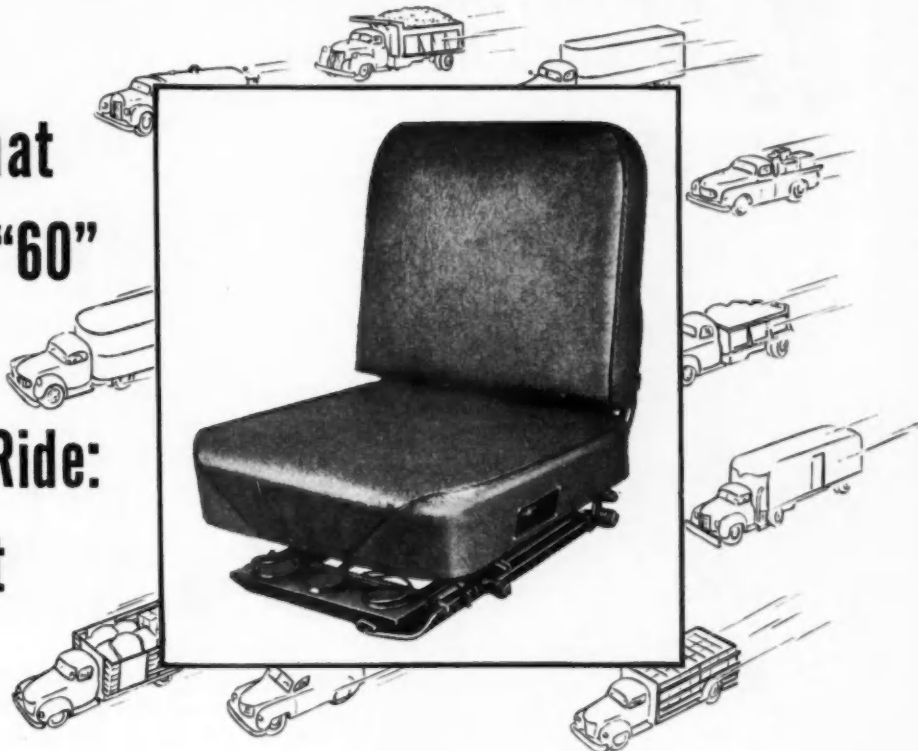
SEE COMPLETE CATALOG FOR TRAILER ACCESSORIES

COLE-HERSEE CO.

20 OLD COLONY AVE.
BOSTON 27, MASS.

BILLION MILES OF ROAD TESTING

**Leaves No Doubt That
Bostrom Level Ride "60"
Truck Seat Gives
Smoothest, Safest Ride:
Improves Equipment
Handling**



EVER since the revolutionary principle of suspension seating for trucks was first introduced 12 years ago, Bostrom engineers have constantly tested, retested, improved and perfected their truck seat during more than a billion miles of actual road operation until today, the Bostrom Level Ride "60" Seat leads the field in driver-preference.

The Bostrom Level Ride "60" truck seat is a suspension seat with an intermediate linkage system that protects the driver against shocking jars and jolts. Simple weight controls can be easily adjusted for individual driver weight and varying road conditions.

Medium-firm seat and back move as a single unit to eliminate back-scrub. Air vent between back pad and seat cushion provides positive comfort.

Driver-efficiency hits a new high with a Level Ride "60" seat by reducing driver fatigue, thereby assuring maintenance of schedules, stepping up cargo and equipment handling and improving safety margins.

Back cushion springs are arranged to cradle driver and reduce back strain and irritation. All moving parts of the suspension system are incased in rubber for longer life without maintenance. The durable frame is made of

sturdy steel tubing designed for heavy use. Quick, convenient fore and aft adjuster allows seat to be adjusted to fit individual drivers.

Bostrom Level Ride "60" is standard or optional equipment on the following trucks: International Harvester, Diamond T, Sterling White, Reo, FWD, Federal, Oshkosh, Dart, Walter, Hendrickson, Duplex, Peterbilt, Kenworth, White Freightliner, Ward La France.



HYDRAULIC TRUCK SEAT

BOSTROM MFG. CO., MILWAUKEE 4, WISCONSIN

COMMERCIAL CAR JOURNAL, August, 1952



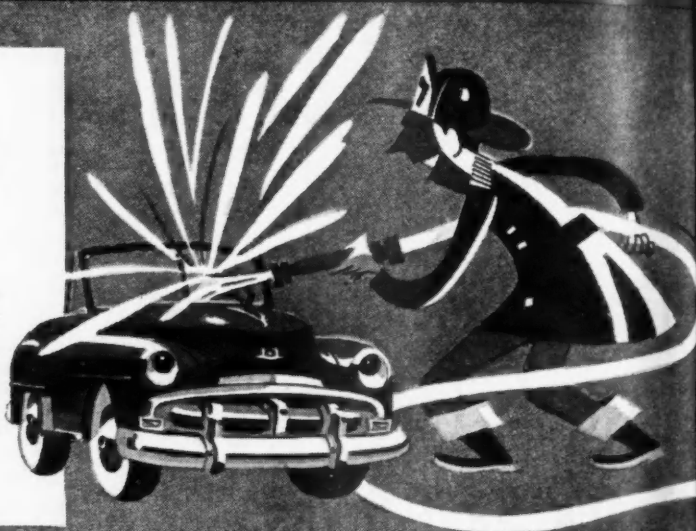
SERVICE TIPS

MOPAR

1.

KEEP THAT WINDSHIELD WET WHEN YOU TEST WIPERS

When testing windshield wipers for operating speed, cleaning action, length of stroke, or proper return to parking position, keep the windshield *wet*! Tests made by running the blades over the dry glass will not prove satisfactory. Furthermore, adjustments made from dry tests may put the wipers out of adjustment for rainy day operation.



*August is MOPAR
safety-vision
Month!*

2.

FOR A CLEARER VIEW, BE SURE TO USE MOPAR SAFETY-VISION PARTS

**Genuine Chrysler Corporation Parts
for Plymouth, Dodge, De Soto, Chrysler
cars, and Dodge "Job-Rated" trucks**

You can rely on better visibility day and night with MoPar windshield wiper blades, sealed beam units and other related Safety-Vision parts and accessories. They're factory-engineered . . . factory-inspected . . . and supplied by Chrysler Motors Parts Corporation. That's proof positive of dependable performance, top quality and lasting satisfaction.

What's more, you can get all the MoPar parts and accessories you want *anytime*—from your nearest Plymouth, Dodge, De Soto, or Chrysler dealer and from many general service and repair shops.

LOOK FOR THE MOPAR SIGN. It identifies the dealer, authorized wholesaler, general repair shop or service station that sells MoPar parts and accessories—engineered for the vehicles built by Chrysler Corporation in your fleet.



CHRYSLER MOTORS PARTS CORPORATION • DETROIT, MICHIGAN

NEW COOPER DSC CONSTRUCTION GIVES MORE CUSHIONING AGAINST TIRE-KILLING ROAD SHOCK



THIS

Cross section of Cooper DSC construction. (1) Thick layers of tough resilient rubber are built between the top several plies. (2) Double cord breakers extend beyond the shoulders, down into the sidewalls. There is more rubber to cushion shock. There is more strength built-in at the shoulders and sides. Cooper DSC truck tires can take more road and load shock. They keep going when tires with less cushioning and uniform strength would break and fail.



NOT THIS

Cross section of a tire with insufficient cushioning to shield it against road and load shock. Short breakers also make it weak and vulnerable at the shoulders and sides. Performs well under normal operating conditions. But lacks the uniform strength and cushioning to absorb the extra shock that results when a tire hits a chuck-hole, stone, curb, or other damaging obstruction. A bruise, break, or blowout is likely to happen. And another tire is headed for the scrap heap!

Cooper DSC truck tires kill shock before it kills them

Many a tire dies prematurely from road and load shock. And especially when a tire hits a chuck hole, bumps over a curb, or some other obstruction on the road.

Cooper DSC construction cuts down these tire fatalities because it makes possible a stronger tire with more layers of rubber to cushion away the destructive forces of shock. The result is fewer bruises, breaks, blowouts! Fewer dollars prematurely on the scrap heap!

And there is no premium to pay for the extra original and recap mileage Cooper DSC guarantees to give. You'll find that your Cooper dealer consistently has the best deal in town. Call him for details — and do it soon.

Free Truck Operators Handbook tells the story of Cooper DSC. Also includes many other cost-cutting ideas. Write for your copy today.

Cooper
TIRE & RUBBER COMPANY
Factories at Findlay, Ohio

TIRES • TUBES • BATTERIES • CAMELBACK • REPAIR MATERIALS

Pick of the 1/2-ton pickups!

There's an extra you can't see in every International light-duty truck. It's STAMINA!

It results from the same kind of engineering that has kept International the heavy-duty leader for 20 straight years. International light-duty trucks stay on the job longer, with less maintenance and lower operating cost. You cut your hauling costs while you enjoy the driving comfort of the roomiest cab on the road.

See your International Dealer or Branch and prove it yourself! You'll never be satisfied with less.

INTERNATIONAL HARVESTER COMPANY • CHICAGO

Look for these International exclusives:

- Silver Diamond valve-in-head truck engines are rugged, packed with extra power. Engineered to save you plenty on operating and maintenance cost.
- New green tinted non-glare safety glass available in the Comfo-Vision Cab. One-piece, full-vision windshield.
- Super-steering system — more positive control. Wider front axles make possible full 37° turning angle for easier handling and maneuverability.
- Wide variety of light-duty models — 1/2, 3/4, and 1-ton sizes — GVW's from 4,200 to 8,600 lbs. 115, 127, and 134-in. wheelbases. Pickup, panel, stake and many other types of bodies.



International Harvester Builds McCormick Farm Equipment and Farmall Tractors . . . Motor Trucks . . . Industrial Power . . . Refrigerators and Freezers

Better roads mean a better America

INTERNATIONAL TRUCKS

"Standard of the Highway"



Mister- this is IT! This outfit brings wheel aligning right down to its ABC's!

Snap-on*

Blue-Point WHEEL ALIGNMENT EQUIPMENT

ACCURATE!

SIMPLE!

PORTABLE!

IN ANY SHOP... regardless of the equipment you may now have... this Snap-on Wheel Alignment outfit will prove faster and easier for your men to use! It's a dependable business-builder... in a few minutes you can show a customer exactly what's wrong... and you've got another profitable aligning job! The equipment is portable... use it anywhere! It's *accurate... none more so* when it comes to checking Caster—Camber—Toe-in—Toe-out-on turns. It's simple to use. It's fast. *And the price is good news in any shop's budget!*

Interested? Let your Snap-on Man demonstrate right in your shop, right *on the job*. If you'd like full information immediately, send for descriptive bulletin and the complete Snap-on catalog of more than 4,000 quality hand-and-bench tools.

SNAP-ON TOOLS CORPORATION

8026-H 28th Avenue, Kenosha, Wisconsin

*Snap-on is the trademark of Snap-on Tools Corporation



MAGNETIC CASTER-CAMBER GAUGE

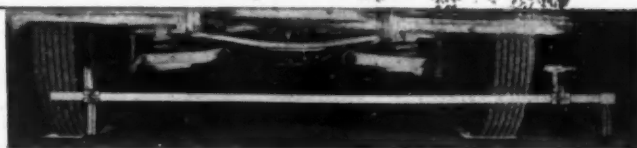
Multiple magnets grip firmly on machined surface of hub— instant reading—no tricky adjustments—no computations! Spring-tensioned centering finder automatically centers gauge!

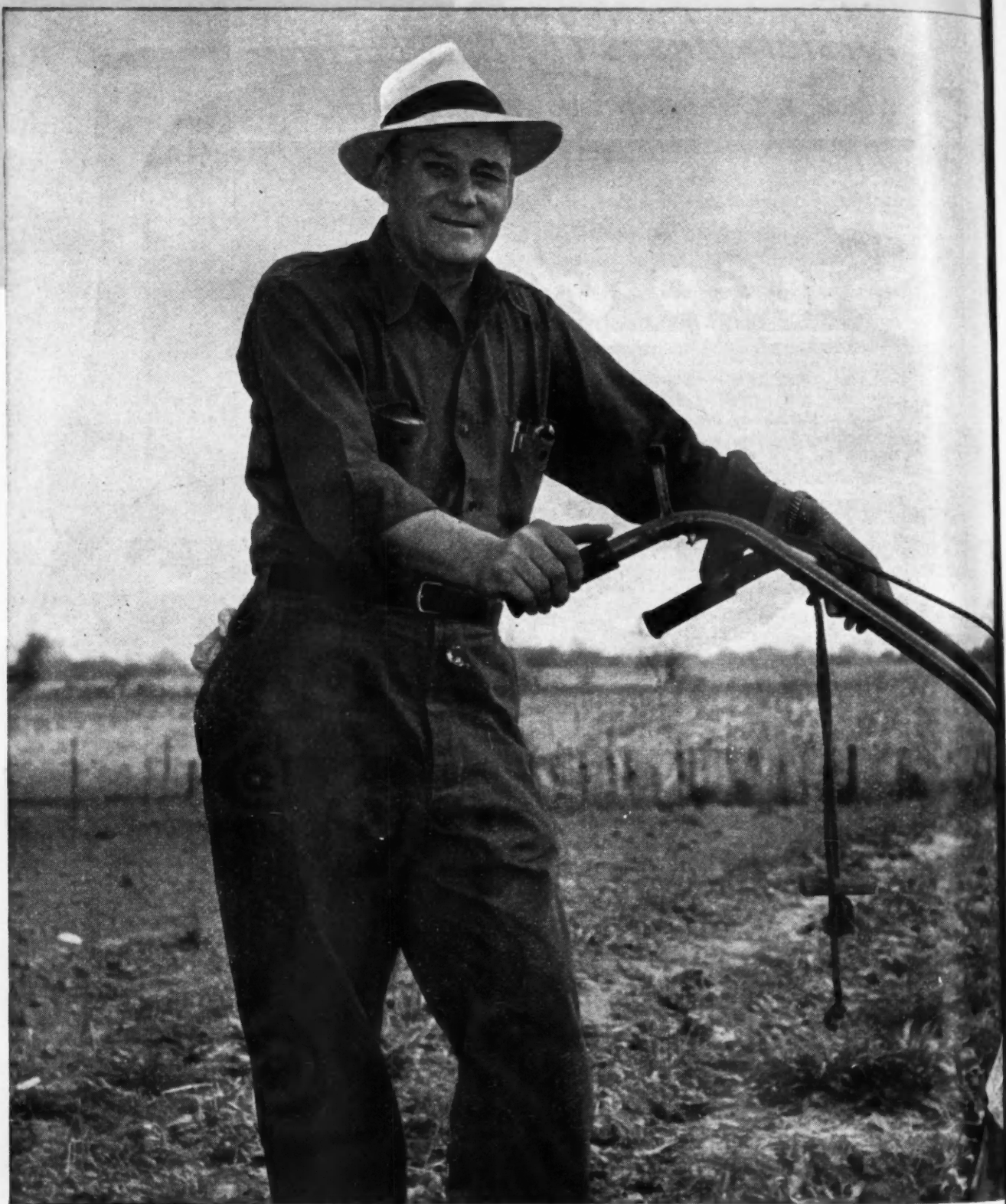
TURNTABLE SET

Precision built. Turning plates "free-floated" and mounted on ball bearings. Large pointers give accurate degree readings for caster and geometry.

TOE-IN TRAMMEL BAR

Seven-foot bar with traveling gauge gives you a fast method of checking toe-in. The traveling gauge is calibrated in inches for easy reading.





FRED J. HARRISON, Foreman, Night Hawk Freight Service Inc., St. Louis, Mo., engaged in his hobby, vegetable gardening, on his Maryville, Illinois, farm.

Spicer

SPECIALISTS IN SERVICE



Spicer Clutch Quality ...

has served the quality truck field since 1911

Spicer and Spicer Brown-Lipe Clutches have been an integral part of the revolution in transportation which the truck has brought to the world. The first Brown-Lipe Clutch for truck service was shipped on March 10, 1911. The transition from that period of the plodding horse, to the swift-moving commercial vehicle of today, has taken but a relatively few years. The vision, genius and untiring efforts of the automotive industry have helped shape this modern miracle. And into it has gone endless thousands of Brown-Lipe Clutches of Spicer quality . . . *Standard of the Industry.*



Spicer

SPECIALISTS IN SERVICE

Spicer

BROWN-LIPE CLUTCH



keeps things moving when the trucking is rough

Spicer Brown-Lipe Clutch service is measured in terms of years, operating under every condition of truck service encountered in the industry. Special features include:

- UNIFORM OVERALL PRESSURE.** Through 360° of pressure plate.
- SIMPLE SCREW THREAD ADJUSTMENT.** Permits quick, easy adjustment.
- LONGER BEARING LIFE.** Completely shielded release bearing.
- NON-WARPING PRESSURE PLATE.** Made of heat treated alloy.
- SMOOTH.** Flexibility of levers results in smooth pick-up.
- NO CHATTER.** Assures longer life.
- LOW PEDAL PRESSURE.** Remains essentially constant throughout clutch life.
- FEWER PARTS.** Greater efficiency with less upkeep.
- INSULATED SPRINGS.** Heat from plate cannot destroy their temper.
- ECONOMICAL.** Delivered completely engineered—not necessary to design or purchase special transmission front bearing caps, clutch release bearings or housings.

48 YEARS OF
Spicer
SERVICE

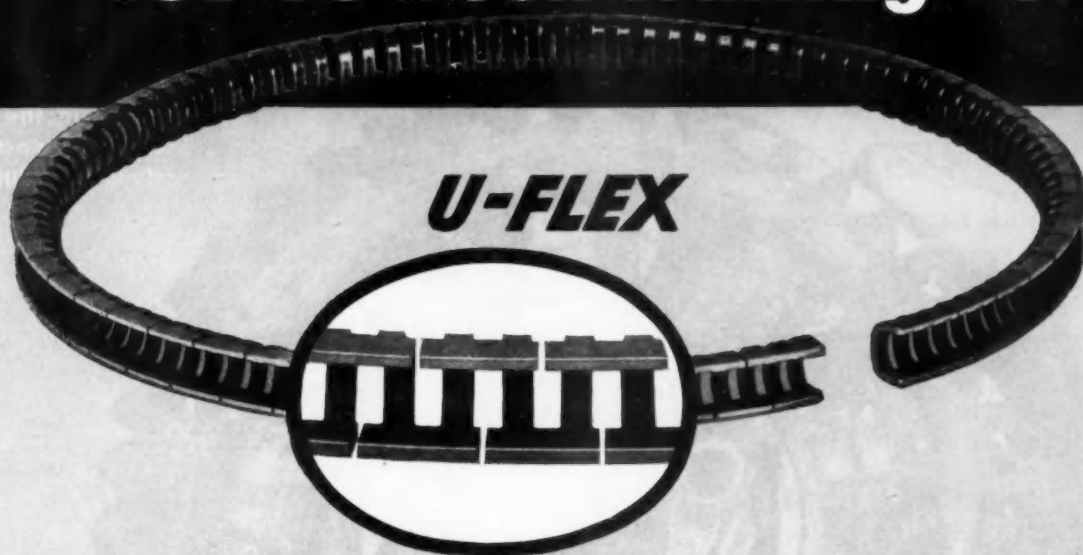
SPICER MANUFACTURING

Division of Dana Corporation • TOLEDO 1, OHIO

TRANSMISSIONS • UNIVERSAL JOINTS • BROWN-LIPE AND AUBURN CLUTCHES • FORGINGS • PASSENGER CAR AXLES • STAMPINGS • SPICER "BROWN-LIPE" GEAR BOXES • PARISH FRAMES • TORQUE CONVERTERS • POWER TAKE-OFFS • POWER TAKE-OFF JOINTS • RAIL CAR DRIVES • RAILWAY GENERATOR DRIVES



The New Piston Ring Sets You've Been Waiting For!



U-FLEX • Aerotype PISTON RING SETS

NOW FOR THE FIRST TIME, you can get *complete* Piston Ring Sets that include the revolutionary U-FLEX oil control piston ring—from your Thompson Products Jobber!

The heart of these new U-FLEX • Aerotype Piston Ring Sets is, of course, the U-FLEX oil control ring that has been adopted by Buick, Nash, International Harvester and other leading automotive builders. In these many engines U-FLEX is setting an entirely new standard for oil economy and efficient cylinder bore lubrication.

The companion rings that complete the U-FLEX • Aerotype Sets are matched by our engineering and testing departments to give perfectly balanced, long lasting, high-efficiency performance with the U-FLEX. These companion rings are the finest that modern piston ring design and metallurgy can produce.

U-FLEX • Aerotype Ring Sets are available for all engines in which U-FLEX is used by car and truck builders. Your TP Jobber can tell you what the listings are. Look for the black-and-gold U-FLEX • Aerotype Set boxes on his shelves—truly "the new GOLD STANDARD for piston ring performance".



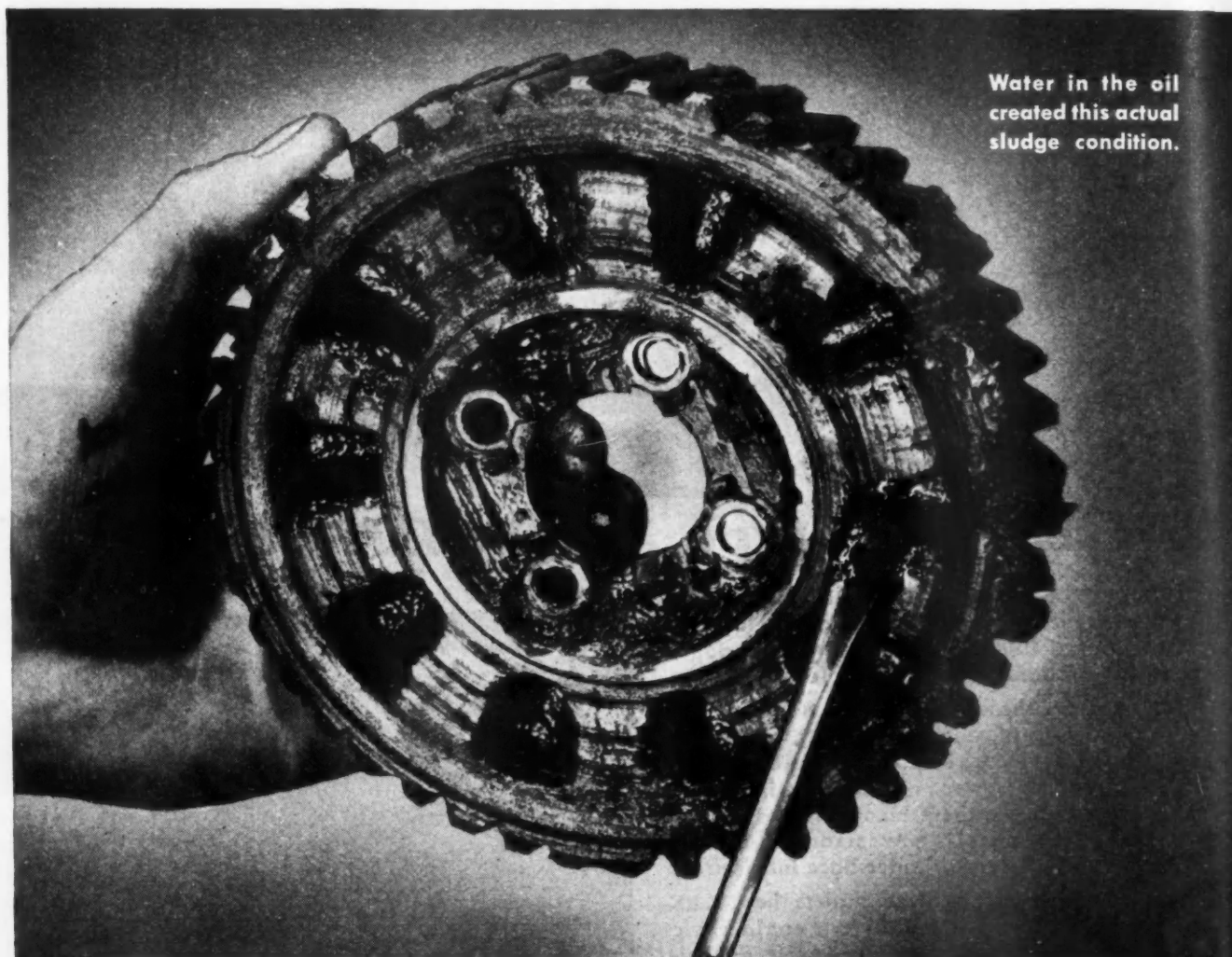
In the new BLACK-AND-GOLD boxes on the shelves of your TP Jobber.

See Your **Thompson**  **Products** Jobber

SERVICE DIVISION • 2209 ASHLAND ROAD, CLEVELAND 3, OHIO

LUBRICATION EXPERTS KNOW . . .

WATER IN THE OIL



Water in the oil
created this actual
sludge condition.

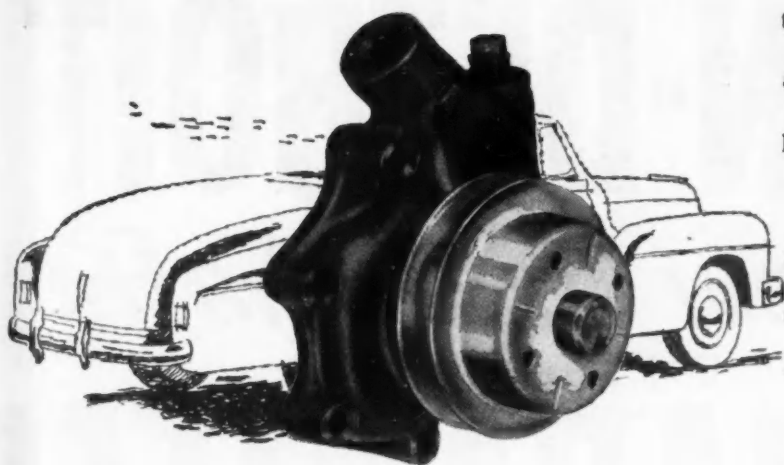
WATER IS THE GREATEST ENEMY OF MOTOR OIL!



Water Makes Acids—the major cause of engine wear. Highly acidic blow-by fumes condense in the presence of water, form dangerous corrosive acids which are carried in the oil stream to all parts of the engine.

Water Destroys Detergency—the newest advancement in lubrication. Water can destroy certain of the dispersant actions of heavy duty oils . . . causing contaminants normally held in suspension to settle out.





PUMPS for the cooling systems of cars, trucks, buses and tractors or pumps for grinding and cutting machines are engineered and precision built by Thompson.

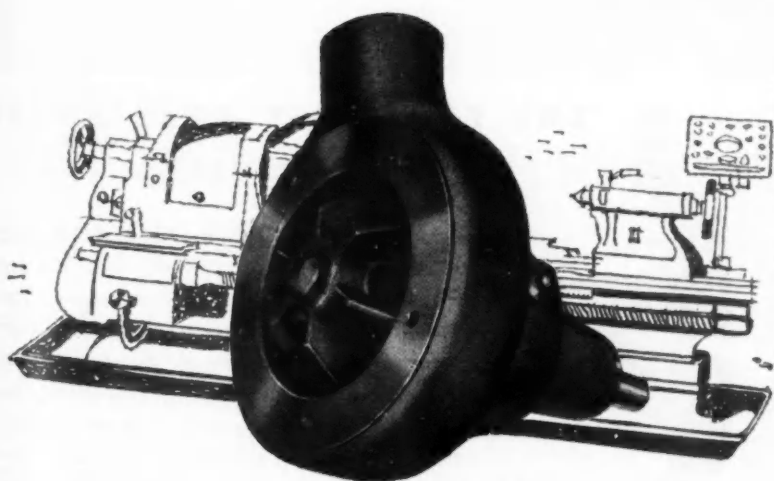
Thompson engineering and Thompson production skills have been sharpened by the production of automotive and aircraft parts for over 50 years.

All the techniques and skills gained in making unbelievably complex items, many made to the closest tolerances, are applied to Thompson automotive and industrial pumps.

For pump performance you can take for granted: *count on* Thompson

This means that every Thompson pump assures maximum performance and dependability.

If you need pumps to keep your product cooled or pumps to cool your engines, write or phone Special Products Division, Thompson Products, Inc., 2196 Clarkwood Rd., Cleveland 3, Ohio. You'll soon learn what leading manufacturers have known for 50 years —you can count on Thompson.



Thompson Products, Inc.

SPECIAL PRODUCTS DIVISION

2196 Clarkwood Rd. • Cleveland 3, Ohio



Cylinder Sleeve



Industrial Pump



Water Pump



Piston Pin



Valve Seat Insert



U-Flex Piston Ring

TIMKEN-DETROIT

Torsion-Flow Axle Shafts

(PATENTED)

NOW GUARANTEED



Guarantee

Effective Aug. 1, 1952, any Timken-Detroit Torsion-Flow Axle Shaft is guaranteed for 100,000 miles of operation or for 3 years, whichever occurs first, against defective material or workmanship (but not against accident or abuse) when these shafts are used on a vehicle the specifications of which have been approved by our engineering department.

Authorized dealers of trucks equipped with Timken-Detroit Axles will replace any broken Timken-Detroit Torsion-Flow Axle Shaft upon presentation of the axle shaft and the proper filing of replacement form.

THE TOUGHEST AXLE SHAFT EVER BUILT!

Timken-Detroit's Torsion-Flow Axle Shafts are specifically designed to withstand the stresses of heavy-load service. The torsion-flow method of forging makes the grain structure of the steel conform to the profile of the flange. At any point in the flange, twisting stresses are *against* the grain flow of the steel. Flange failures are practically non-existent. Moreover, special heat treating is used for high Brinell hardness at the surface graduated to a softer center core. Finally, this tough, heat-treated shaft is *shot-peened*—blasted with air-blown steel shot—to give it still greater skin hardness—still greater strength in heavy-duty service.

**WORLD'S LARGEST MANUFACTURER
OF AXLES FOR TRUCKS, BUSES AND TRAILERS**



DIAMOND T DIESELS are "Tops" because they're engineered to the job!

SHREWD operators are buying Diamond T Diesels. They appreciate that reliability and long life are assured by Diamond T's engineering each truck precisely to its job. They get Diamond T economy in maintenance along with the Diesel savings.

Diamond T Diesels are built in a complete range to 300 h.p., with variations in axle, transmission and wheelbase that enable us to "tailor" them exactly to every type of heavy-duty service. Pictured is the light-weight Model 723, powered by the

Cummins JBS engine, which develops 150 truck horsepower at 2500 r.p.m.

Your Diamond T dealer will show you what these diesels can do for you. Fuel savings alone can run up to 3 cents a mile and more. He has also the complete line of gasoline models from 1½ tons up, if they better suit your need. His business is to supply "The Truck of Lowest Cost"—and he knows his business. Call him now.

DIAMOND T MOTOR CAR CO. CHICAGO
Established 1905



DIAMOND T TRUCKS

THE TRUCK OF LOWEST COST



IT'S NOT TOO EARLY TO ORDER YOUR WEED CHAINS

Don't wait until it's too late! When it snows everybody wants Weeds. Order yours now and be sure of Weed quality. See your nearby Weed Chain Distributor now about next winter's Weeds. They grip better, wear longer, get your trucks through when the going is tough.

Famous
WEED V-BARS
Now Available
for Light Trucks



ACCO

In Business for Your Safety



**AMERICAN CHAIN DIVISION
AMERICAN CHAIN & CABLE**

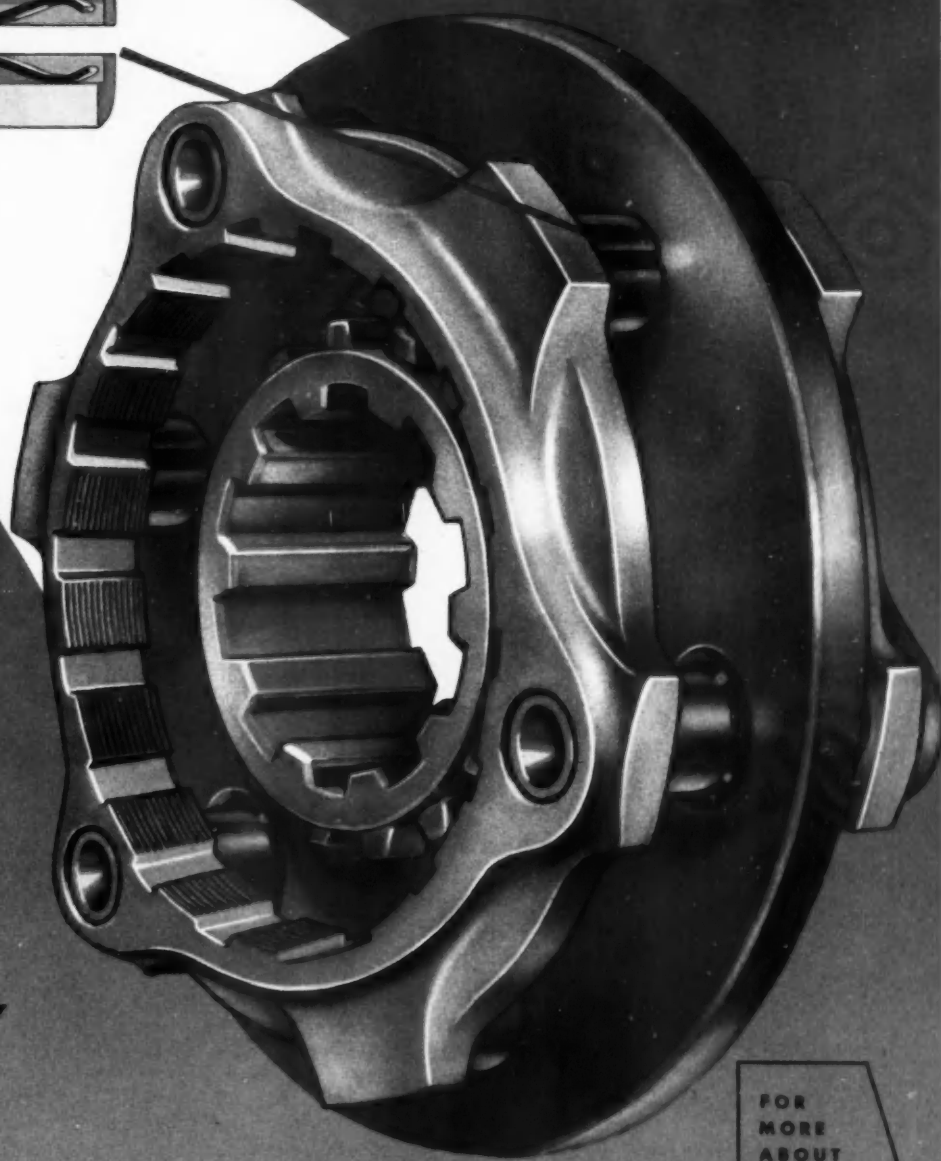
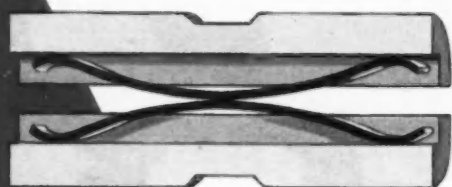
York, Pa., Atlanta, Chicago, Denver, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.

**WEED
TIRE CHAINS**

CLARK

THE

Split-Pin Synchronizer



featuring

SIMPLICITY

RUGGEDNESS

DEPENDABILITY

CLARK EQUIPMENT COMPANY

BUCHANAN, MICHIGAN • Other Plants • BATTLE CREEK • JACKSON, MICHIGAN

FOR
MORE
ABOUT
CLARK
EQUIPMENT
TURN
THE
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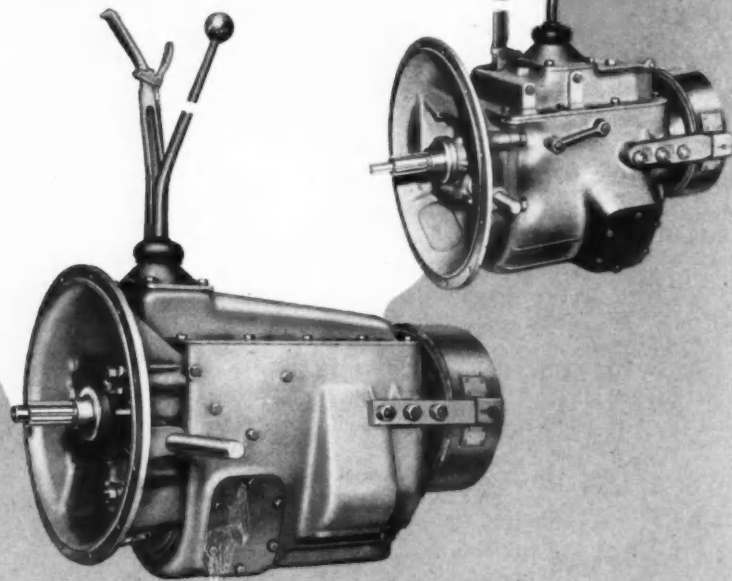
BARS
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st, 1952



CLARK Transmissions

CLARK transmissions are now available featuring THE "SPLIT-PIN" SYNCHRONIZER. In keeping with its traditional enthusiasm for engineering development, Clark not only builds a full range of conventional models, but specializes in designing and producing transmissions for unusual requirements for trucks, buses, farm tractors, industrial trucks and road building machinery.



Products of Clark — TRANSMISSIONS



AXLE HOUSINGS



FORK TRUCKS & TOWING TRACTORS



GEARS & FORGINGS



FRONT & REAR AXLES FOR TRUCKS & BUSES



TRACTOR UNITS



HEAVY DUTY all the way!



Heavy Duty Service-Heavy Duty Oil in the Crankcase and a WIX HEVI-DUTY Cartridge to Keep it Clean . . .

The *best* is none too good for your fleet whether yours is a pick-up-and-delivery operation, a taxi fleet or big, rugged over-the-road service. Second quality, built-to-fit-a-price cartridges cannot give you the two-fold economy of WIX Engineered Filtration which you get with genuine top grade WIX HEVI-DUTY Cartridges. WIX HEVI-DUTY Cartridges, containing WIXITE*, surely and constantly trap harmful grit, dust, dirt and sludge yet do not disturb the detergent-dispersant action of the oil additives. And with WIX Cartridges in your filters you enjoy a new freedom from layups, repairs and excessive engine wear.

Take advantage of the money-saving WIX-PAX service which brings you direct-from-the-factory shipments of genuine WIX Cartridges (not second grade substitutes). Your jobber will give you full particulars.

* WIXITE, the exclusive WIX development — the filtrant of Resilient Density — which filters motor oil by Adsorption — not mere surface coating or Adsorption. WIXITE gives you better filtration, longer cartridge life and DOES NOT remove oil additives.

wix
TRADE MARK REG.

OIL FILTERS CARTRIDGES

WIX ACCESSORIES CORP. • GASTONIA, N. C.

CANADIAN FACTORY: WIX ACCESSORIES CORP., LTD., 25 CURITY AVE., TORONTO 13, ONT.

WIX-PAX FOR FLEETS

This money-saving service through your jobber brings you genuine WIX HEVI-DUTY Cartridges (not second quality substitutes) direct from the factory (or Dallas or Pacific Coast warehouses) shipped prepaid in assortments of your choice; packed in standard cartons in shipments of 100 lbs. or more. Order from your local jobber. Mail coupon for full information.



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Please send us your complete catalog and full price information on WIX-PAX.

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City..... Zone..... State.....

Success Story -1952

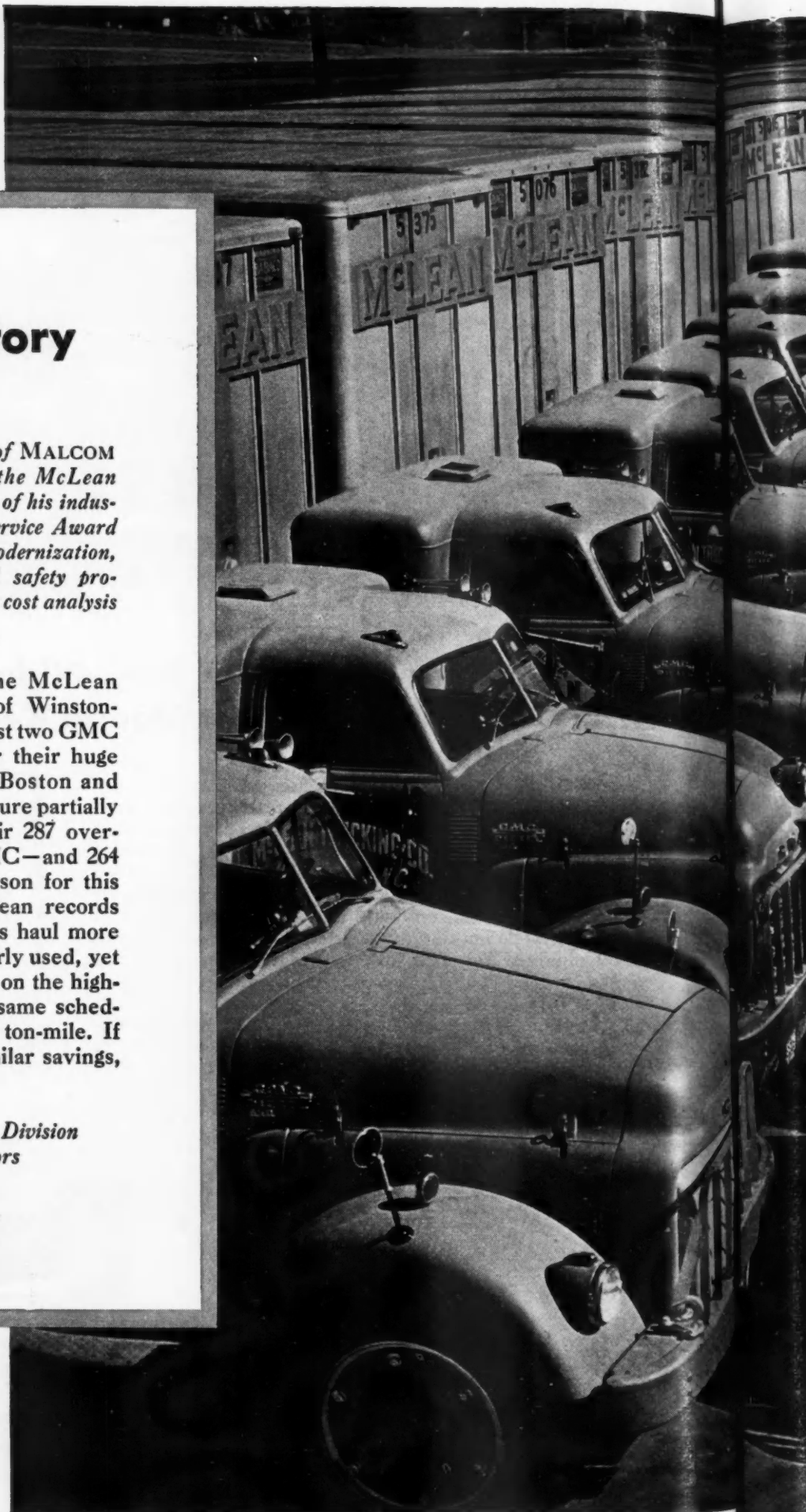
A report of the experience of MALCOM MCLEAN, President of the McLean Trucking Company, winner of his industry's 1952 Distinguished Service Award for "Progressive fleet modernization, establishment of advanced safety program and fostering of better cost analysis system."

JUST two years ago, the McLean Trucking Company of Winston-Salem, N. C., bought its first two GMC middleweight Diesels for their huge fleet, hauling between Boston and Atlanta. Today, as this picture partially shows, every one of their 287 over-the-road tractors is a GMC—and 264 more are on order. Reason for this 100% change-over: McLean records show these lighter Diesels haul more pay load than units formerly used, yet they put less total weight on the highway. They maintain the same schedules with lower cost per ton-mile. If you are interested in similar savings, see your GMC dealer.

*GMC Truck & Coach Division
of General Motors*



*Photograph taken at
McLean's central terminal,
Winston-Salem, North Carolina*





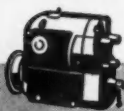
Here's How to **CUT EXPENSE** and **DELAYS** Due to Overworked Batteries



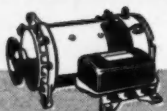
When short runs in heavy traffic, frequent idling, the extra load of 2-way radio and other electrical accessories drain batteries and create maintenance headaches, here's your positive remedy—the new, low cost, 55 amp. American Bosch Special Service Generator! It's the smallest heavy-duty Generator with this big output—only 2 units. Moreover, it gives you 20 amps. at idle and reaches full output at 15 mph. Think what this low cut-in speed and fast increase in charging rate can do to keep your batteries UP . . . and lost manhours, re-charging nuisance and maintenance expense DOWN.

There is no longer any need to damage batteries by over-cycling, or to waste gas, oil and risk needless wear, with engines set up at fast idle to keep batteries fully charged. Put this great new Generator to work on your payload units . . . and emergency repairs due to depleted batteries are over! Precise voltage control is assured by the famous American Bosch, 2-stage Regulator . . . no creeping, no runaway voltage. Radio parts require less attention—last longer—perform better. Ask for the battery-saving, cost-reducing story on the GRC NOW! American Bosch Corporation, Springfield 7, Mass.

AMERICAN BOSCH



Automotive and Aviation Magnets



Generators and Regulators



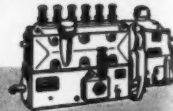
Components for Aircraft Engines



All Electric Windshield Wipers

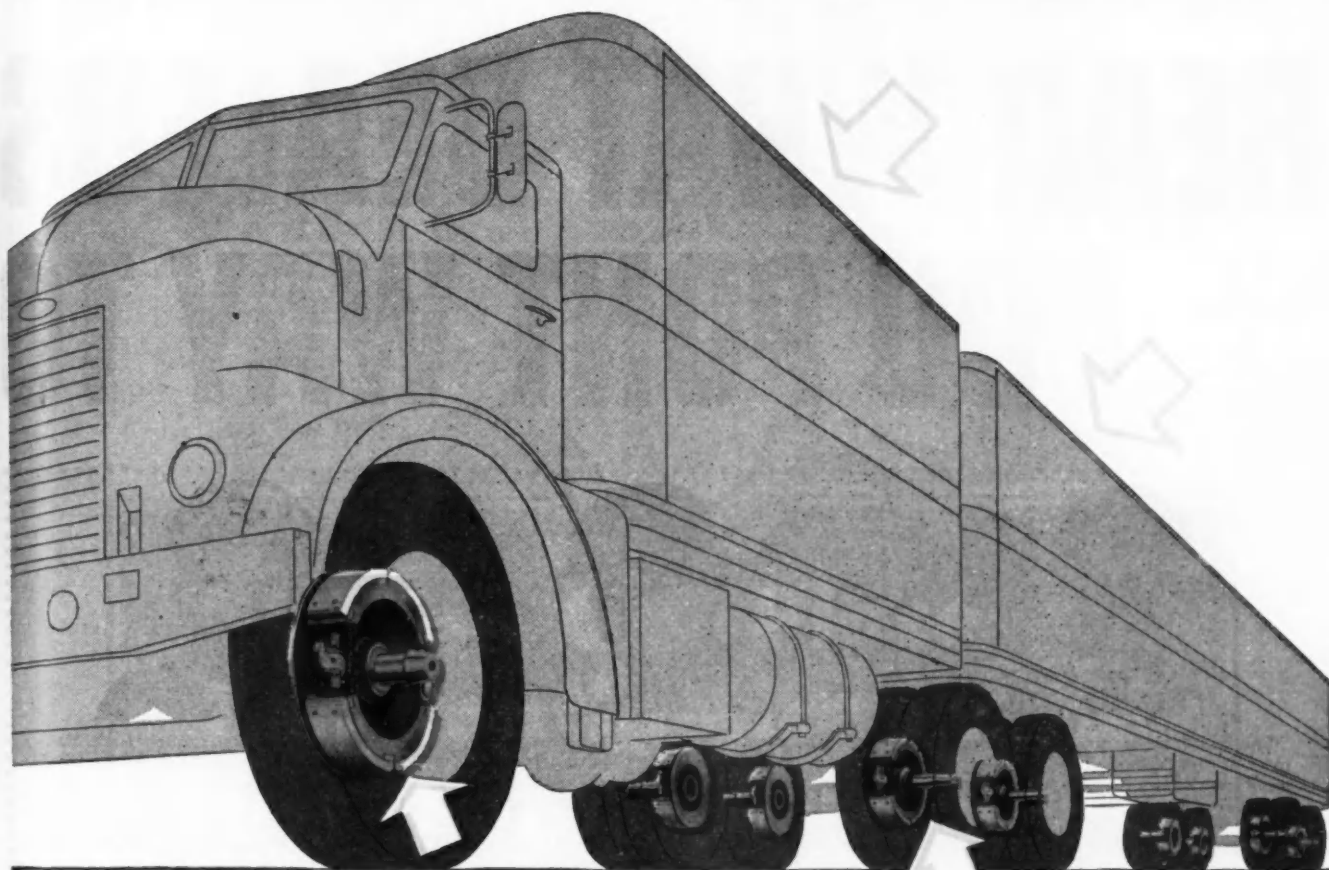


Ignition Coils



Diesel Fuel Injection Equipment

YOU PUT PAY LOADS HERE...



The Dromedary tractor and standard semi-trailer combination developed by Pacific Intermountain Express.

BUT YOU STOP THEM HERE

That's why you need the most dependable brake lining you can buy. It must respond instantly, safely, under every driving condition. Wear slowly, evenly, for maximum mileage. Require fewer adjustments, protect drums, for less maintenance.

American Brakeblok is your answer, on all counts. Leading bus and truck operators have proved it. It's first choice on their equipment, has been for years. Make it first choice on yours.

★ ★ ★

An American Brakeblok Service Engineer will help solve your braking problems. His services are available on request. Write to American Brakeblok Division, 4600 Merritt Ave., Detroit 9, Michigan.

**American
Brakeblok**
800, U. S. PAT. OFF.

THE SAFETY BRAKE LINING

AMERICAN

Brake Shoe

COMPANY

AMERICAN BRAKEBLOK DIVISION
DETROIT 9, MICHIGAN

Can early servicing sell more anti-freeze,

READ WHAT DEALERS DU PONT WAY TO



"The Early Servicing Plan increased my sales 50%! In dollars and cents it gave me 75% more profit. Sure I'm using it this year!"

MAYNARD FREUND
Third & Grand Serv. Sta., Des Moines, Iowa



"My customers demand 'Zerone' and 'Zerex'! The Du Pont plan helped increase sales approximately 63% last year. Am sure to use Plan next year."

LES FELLOWS
Park Ave. Conoco Serv., Minneapolis, Minn.



"I like to avoid last-minute rush. So we used the appointment system to service cooling systems in advance. It was good."

ALEX FROELICH
A & L Service Station, Mandan, N.D.



"Du Pont's Early Service Program made me \$700 clear. Any plan that makes that much money—I like!"

O. P. TRACEY
O. P. Tracey Super Serv. Sta., Detroit, Mich.



"Oklahoma weather often changes abruptly. The plan induced customers to have their cars winterized earlier. More profit, less rush for us; greater safety for car owners."

ED HADLOCK
Ed Hadlock Serv. Sta., Oklahoma City, Okla.



"The Du Pont Program meant an actual dollars-and-cents increase of 25% in my anti-freeze sales."

RICHARD NANCE
Brown Motor Sales, Toledo, Ohio



"About 90% of the cars we service take Du Pont anti-freezes. I like to be all set in advance, and the Early Service Program works fine for me."

CHARLES A. CARLIN
Carlin's Esso Station, Newark, N. J.



"The Du Pont Program is a natural to increase profits and overcome that last-minute rush. And I've found it pays to be ready early."

HARRY O'BRIEN
Harry O'Brien Serv. Sta., Pittsburgh, Pa.



"Any plan that helps sell more anti-freeze and more service is fine with me! And the Du Pont plan lets me space the work out . . . no rush at the last minute."

VERNE B. ANDERSON
Joe & Andy's Texaco Station, Denver, Colo.

1902 • 1952

50 YEARS OF QUALITY LEADERSHIP



**You Can Place
Full Confidence in the
Product of the Manufacturer
Who Has Chosen**

CONTINENTAL RED SEAL

**as the Heart
of His Machine**

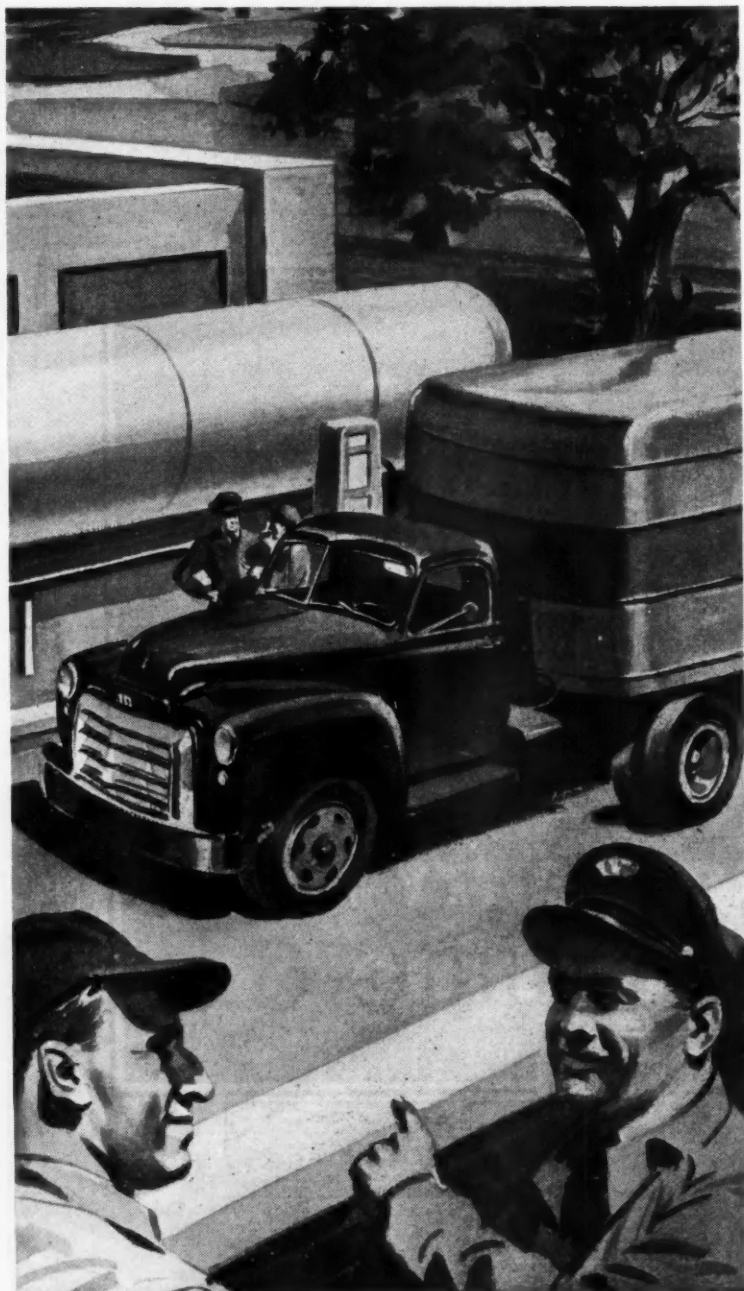
PARTS AND SERVICE EVERYWHERE

TODAY'S BROAD AND DIVERSIFIED LINE OF CONTINENTAL RED SEAL ENGINES INCLUDES SOME 80 BASIC MODELS, BUILT TO MORE THAN 2,000 DIFFERENT SPECIFICATIONS FOR COUNTLESS APPLICATIONS ON LAND, AT SEA AND IN THE AIR.

Continental Motors Corporation

MUSKEGON, MICHIGAN

Fleet Owners Save with **PHILGAS*** Propane Fuel!



SAVE ON FUEL: Accurate records from large hauling operations showed savings up to 1¢ per mile with Philgas, compared with gasoline or diesel fuel.

SAVE ON MAINTENANCE: Because Philgas burns so clean it has given more miles between overhauls . . . up to twice the mileage, or more! No cylinder wall washing. Long ring life. Low cylinder wear. To get the full advantage of savings effected by Philgas, use Phillips 66 Heavy Duty Motor Oil.

100 OCTANE PLUS: Philgas burns smoothly with sustained power. No smoke, no smelly fumes. Enclosed filling system is automatic. No waste from overflow or evaporation. Safe and easy to use.

WRITE FOR FACTS: Let a qualified Phillips Petroleum Company engineer show you how you can save money by converting to Philgas. Conversion costs are low . . . payout time short. For full information and money-saving advice on conversion plans, write the nearest Phillips Petroleum Company office.

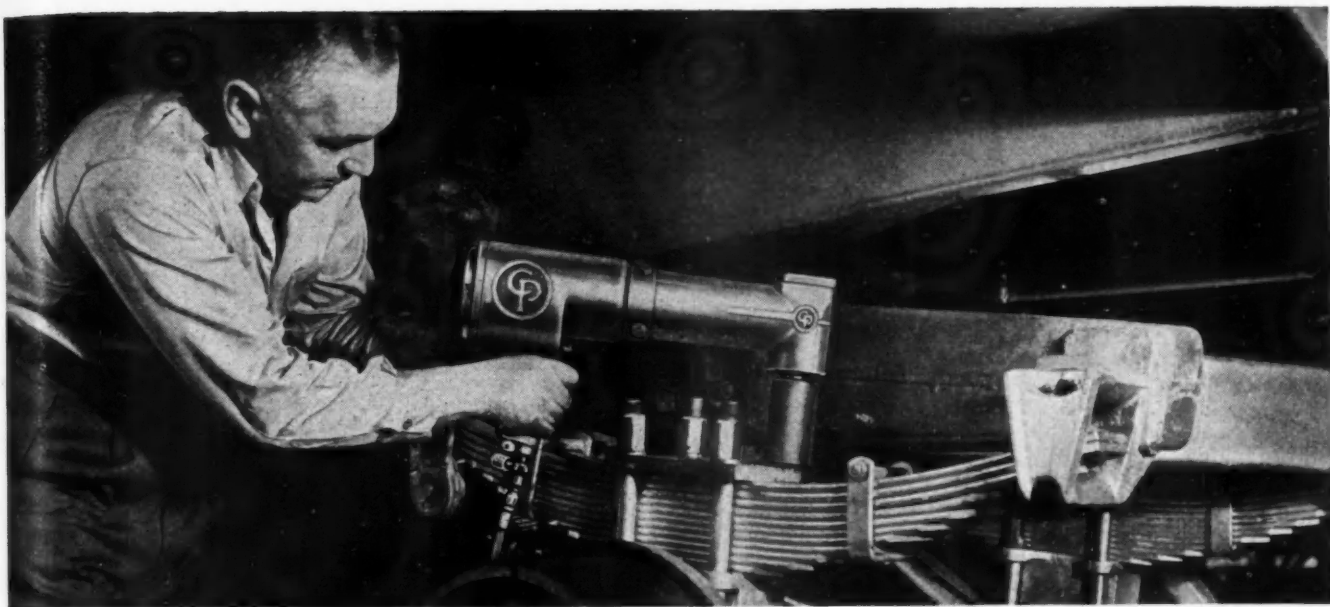
*Philgas is the Phillips Petroleum Company trademark for its high quality propane, butane, LP-Gas or bottled gas.



PHILLIPS PETROLEUM COMPANY

Sales Department • Bartlesville, Oklahoma

Offices in: AMARILLO, TEX.—First National Bank Building • ATLANTA, GA.—1226 Candler Building • CHICAGO, ILL.—7 South Dearborn
DENVER, COLO.—2185 Broadway • DES MOINES, IA.—Hubbell Building • PONTIAC, MICH.—2635 Orchard Lake Road
INDIANAPOLIS, IND.—1112 North Pennsylvania St. • KANSAS CITY, MO.—500 West 39th St. • MILWAUKEE, WIS.—Jones Island
MINNEAPOLIS, MINN.—212 Sixth St. South • NEW YORK, N. Y.—80 Broadway • OMAHA, NEB.—WOW Building
RALEIGH, N. C.—16 W. Martin St. • ST. LOUIS, MO.—4251 Lindell Boulevard • TULSA, OKLA.—21st and Utica • WICHITA, KAN.—501 KFH Building



POWER PLUS — to run nuts and bolts on these troublesome pull-up jobs.



DETACHABLE ANGLE HEADS — for the hard-to-get-at places.

ONLY

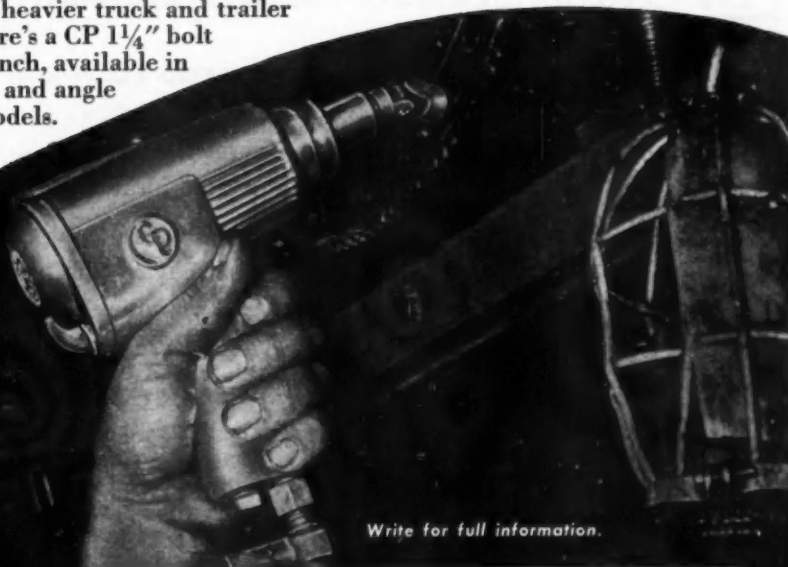


AIR IMPACT WRENCHES HAVE ALL THREE

The complete Chicago Pneumatic line includes heavy-duty, Controllable Power Air Impact Wrenches, $\frac{1}{2}$ " , $\frac{5}{8}$ " and 1" bolt capacities, all with detachable angle heads. For the heavier truck and trailer jobs there's a CP $1\frac{1}{4}$ " bolt size wrench, available in straight and angle head models.



CONTROLLABLE POWER — for running a series of nuts to uniform, predetermined tightness.



Write for full information.



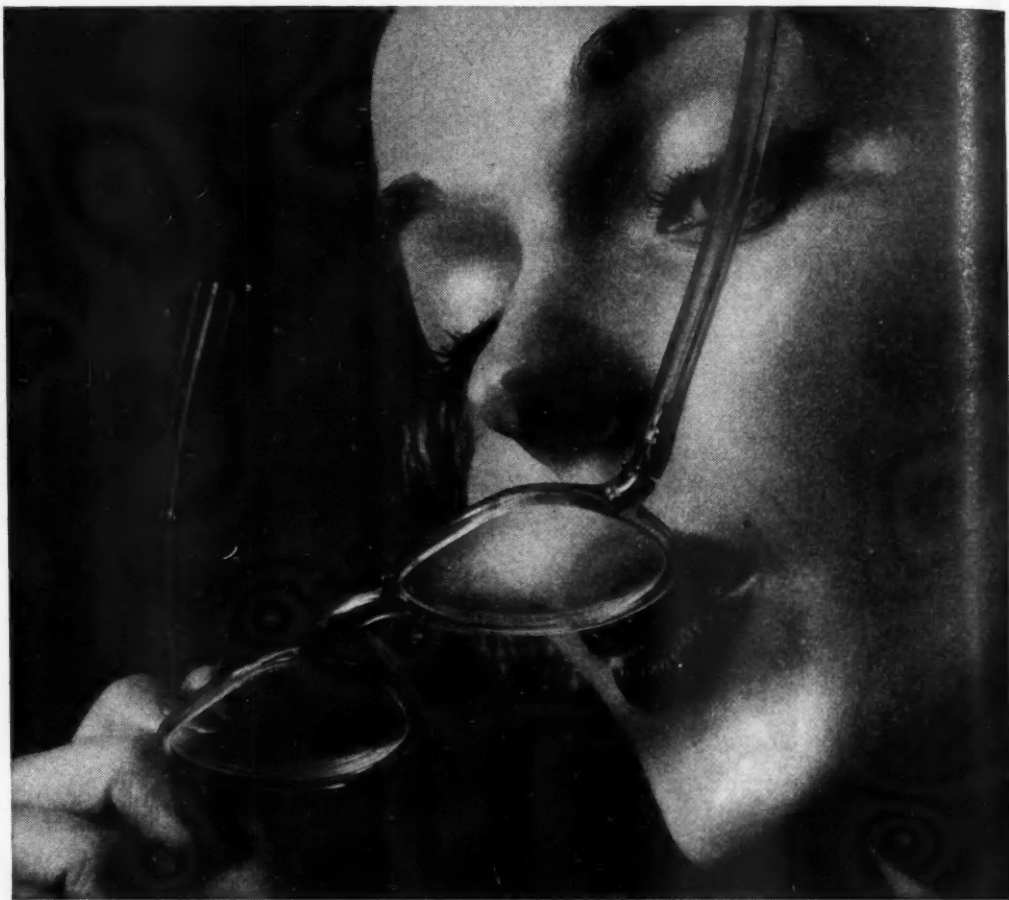
CHICAGO PNEUMATIC TOOL COMPANY

General Offices: 8 East 44th Street, New York 17, N. Y.

AUTOMOTIVE SERVICE EQUIPMENT • FENDER IRONS • ELECTRIC TOOLS
AIR IMPACT WRENCHES • AIR COMPRESSORS • PNEU-DRAULIC PUMPS

There is a difference in sealed-beam headlamps

...and this
is it →



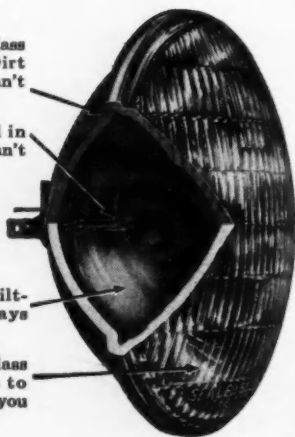
All-Glass sealed-beam headlamps do not grow dim

One-piece All-Glass construction. Dirt and moisture can't get in.

Filaments held in vise-like grip. Can't shake loose.

Mirror-like, built-in reflector. Stays bright.

Rugged, hard-glass precision lens to put light where you want it.



WHEN YOU BLOW ON YOUR GLASSES, moisture condenses on the lens. When moist air gets inside some types of sealed-beam headlamps, the same thing happens. It condenses on lens and reflector. And as the water deteriorates the reflector, the lamp grows dimmer.

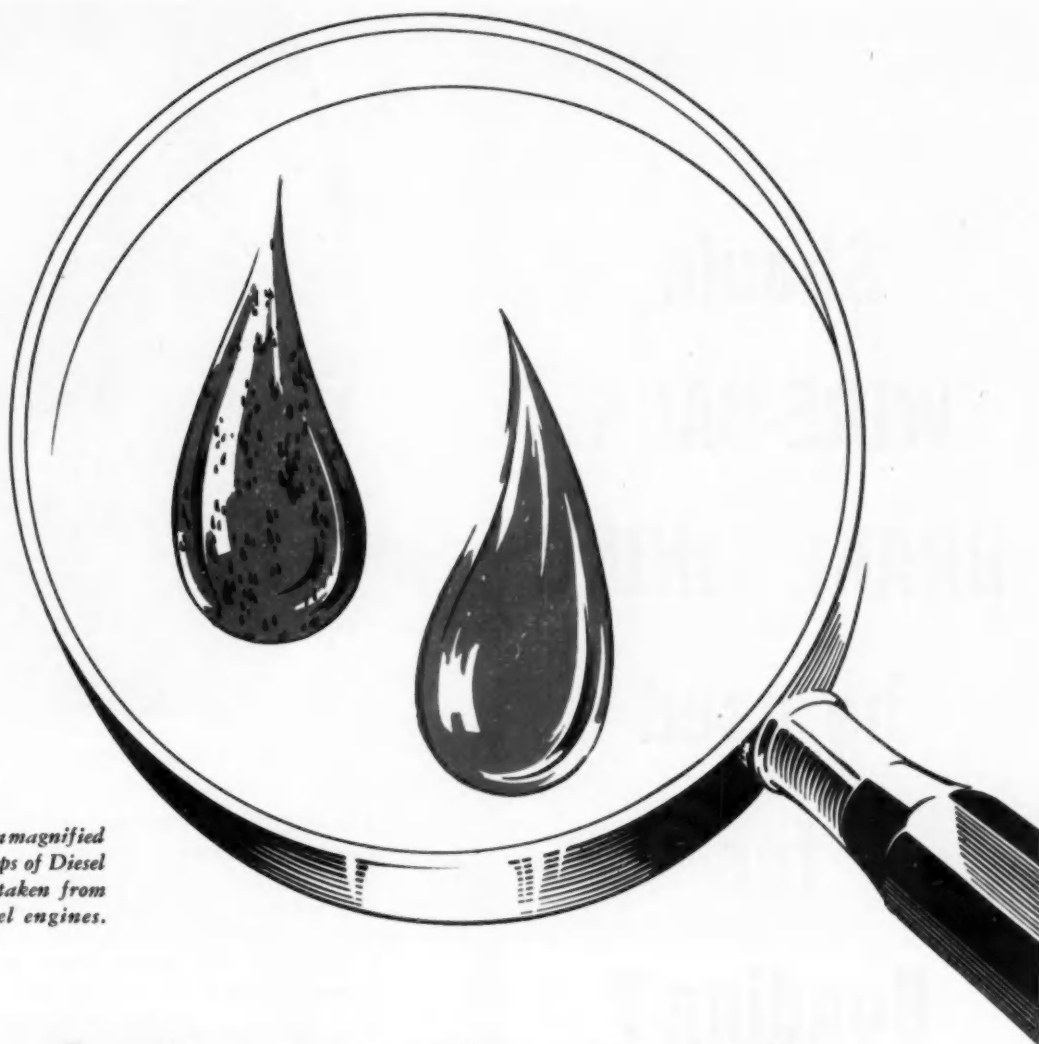
Moisture *can't* get into General Electric sealed-beam headlamps because they're All-Glass and all one big bulb. Tests show they average 99% as much light after years of use as when new.

GET SET FOR MORE DARK-TIME DRIVING!

The longer, darker evenings of Fall are on the way. Now's the time to inspect your fleet's headlamps. Look for light-stealing moisture inside lamps. Check for burnouts and dim lamps. Then . . . for dependable, long lasting service . . . replace with General Electric All-Glass headlamps. *They do not grow dim.*

You can put your confidence in—

GENERAL  ELECTRIC



Drawn above is a magnified view of two drops of Diesel lubricating oil taken from two new Diesel engines.

Which is the better diesel oil ?

Chances are, you'd pick the clear clean oil on the right as the better oil . . . but you'd be wrong.

The clean oil is the "lazy" non-detergent oil. It has done a job of lubricating, but it has not done a proper cleaning job.

The better oil is the dirty oil. Its job has been well done. Not only did it provide complete, protective lubrication, but it actually washed the engine! . . . carrying out of the engine those microscopic, insoluble particles that would normally form harmful incrustations on vital engine parts.

The oil holding the dirt particles in suspension is Cities Service D-C 300 . . . one of the complete line of Cities Service Diesel Engine Oils. Its detergent-dispersant and anti-oxidation qualities assure longer, more trouble-free Diesel operation. This high V. I. heavy duty oil guarantees complete lubrication protection at highest engine speeds.

Why not discuss your operation with a Cities Service Lubrication Engineer. His experience and the complete line of scientifically-formulated Diesel lubricants can mean improved operating conditions for you. Write to CITIES SERVICE OIL COMPANY, Dept. H 2, Sixty Wall Tower, New York City 5 . . . or call the Cities Service Office nearest you.

CITIES SERVICE

QUALITY PETROLEUM PRODUCTS

**Should
WIRE-BACK
BRAKE LINING
be used
for
Bonding?

NO!**



The use of wire-back brake lining for bonding just doesn't make sense. Actually it's wasteful, because:

The main argument for bonding is that you get more friction wear surface since there are no rivets and the lining can be worn to a greater depth. But when wire-back segments are used for bonding this advantage is lost as they can be worn only to the wire, then metal meets metal with scored drums a real probability.

This can't happen with Thermoid molded bonding segments. They can be worn practically to the shoe surface because they are high quality friction material throughout—not of wire-back construction.

If you want wire-back lining, Thermoid makes and sells the best; and it will bond well. But we can't honestly recommend *any* wire-back for bonding, because it defeats the main advantage of bonding.

Thermoid Custom Built Bonding Segments are positive in their holding power . . . do not fade or disintegrate . . . never scratch or score brake drums. They duplicate in the bonding field the same high standards for which Thermoid CB Sets have always been known. They carry the same unqualified guarantee of the Pittsburgh Testing Laboratory.

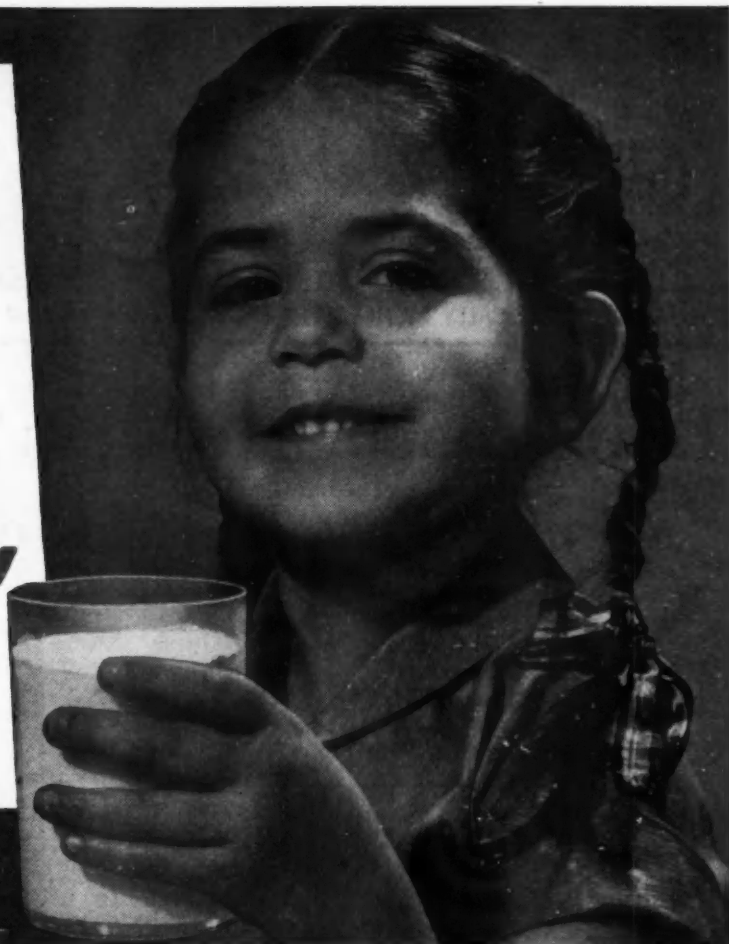


Thermoid

Thermoid Company • Trenton, New Jersey

the standard of precision processing in brake lining, brake blocks, hydraulic fluid, cylinder assemblies, hydraulic brake parts.

Vitamins Can Taste Good, too!

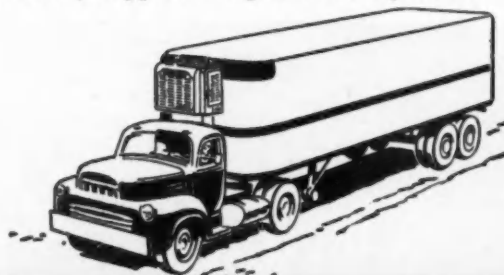


ONLY THERMO KING HAS:
Combination Starter-Generator . . . Plus
Patented Controls . . . for Complete
Start-and-Stop Automatic Operation!

Children now get more healthful dairy products, fruits, vegetables, and meats than ever, and learning that these foods are *more* than "good for them"—they *taste* good, too.

THERMO KING TRUCK REFRIGERATION units help bring health and appetite appeal to the tables of America. They guard food cargoes—insure delivery in perfect condition—with flavor and vitamin content at their peak!

No wonder **THERMO KING** is *Out in Front*, with food processors, shippers and packers everywhere!



U.S. THERMO CONTROL CO.



44 So. 12th St., Minneapolis, Minn.

**World's Largest Builder of Gasoline
Engine Powered Refrigeration Units**

Sales and Service in All Principal Cities

MAIL THIS COUPON—TODAY

U. S. Thermo Control Co.
44 South 12th Street, Minneapolis 3, Minn.

CCJ-8

Gentlemen: Please send immediately complete information about Thermo King Mechanical Refrigeration for trucks and trailers.

To Attention of _____

Firm Name _____

Address _____

City _____ Zone _____ State _____



HOT *Lacquer* NEWS

PUBLISHED PERIODICALLY BY HERCULES POWDER COMPANY IN THE INTERESTS OF BETTER FINISHES AND FINISHING

Twin Coach Lacquers "Convertibles" for Army with One Hot-Sprayed Coat

**Kent, Ohio, Plant
Avoids Thinning, Cuts Finishing
Time and Costs**

Motor coaches manufactured for the military, that can be converted from ordinary passenger vehicles to first aid or trucking use, have joined the growing list of military items now being finished with hot-spray lacquer. Here's why: only one coat needed, application time cut in half, finish is smoother, flow-out is better, blushing is eliminated, and solvents are saved.

Cellulose Products Department
HERCULES POWDER COMPANY
INCORPORATED
921 Market Street, Wilmington 99, Del.



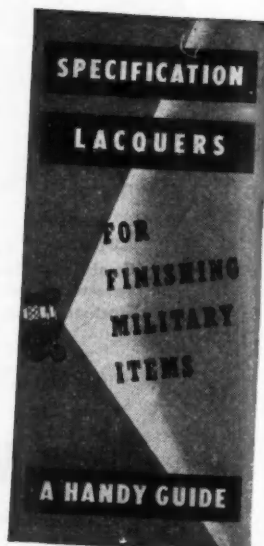
Bus bodies being made ready by cleaning, masking and priming before hot lacquer spraying.



Hot spraying of Army coach convertible under way at Twin Coach Co. plant.

Specification Lacquers for Finishing Military Items

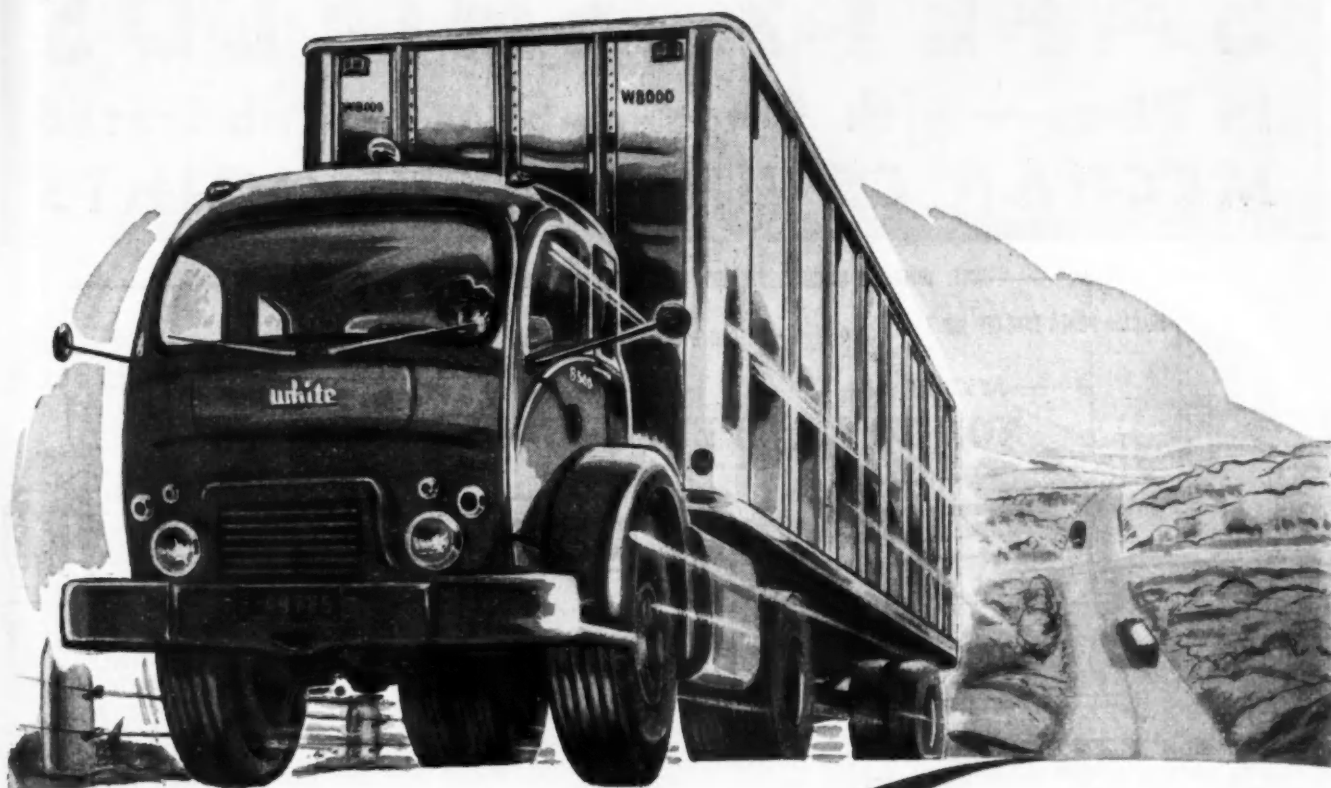
Learn more about lacquer for defense finishing. Send for this handy guide to specification lacquers that helps you decide which finish you will need in performing government contracts. Specification numbers are listed, as well as an index to uses.



CL52-2

Hercules does not make lacquers or equipment, only the ingredients from which lacquers are made

to keep 'em rolling...



you can count on
BLOOD BROTHERS Propeller Shafts



Shippers demand *fast* freight delivery — and that calls for drive line assemblies that stand up... no matter how long or tough the haul.

Blood Brothers Universal Joints and Propeller Shafts are built for just such performance! Like the users and builders of White Motor Trucks, you'll find them a superior combination of rugged design, top-grade material and excellent workmanship.

Why not take full advantage of Blood Brothers 42 years' concentration in this one field by giving your engineers — and ours — an opportunity to work together in the early stages of design?



BLOOD BROTHERS machine co. ALLEGAN, MICHIGAN
UNIVERSAL JOINTS AND DRIVE LINE ASSEMBLIES

Division of Standard Steel Spring Company

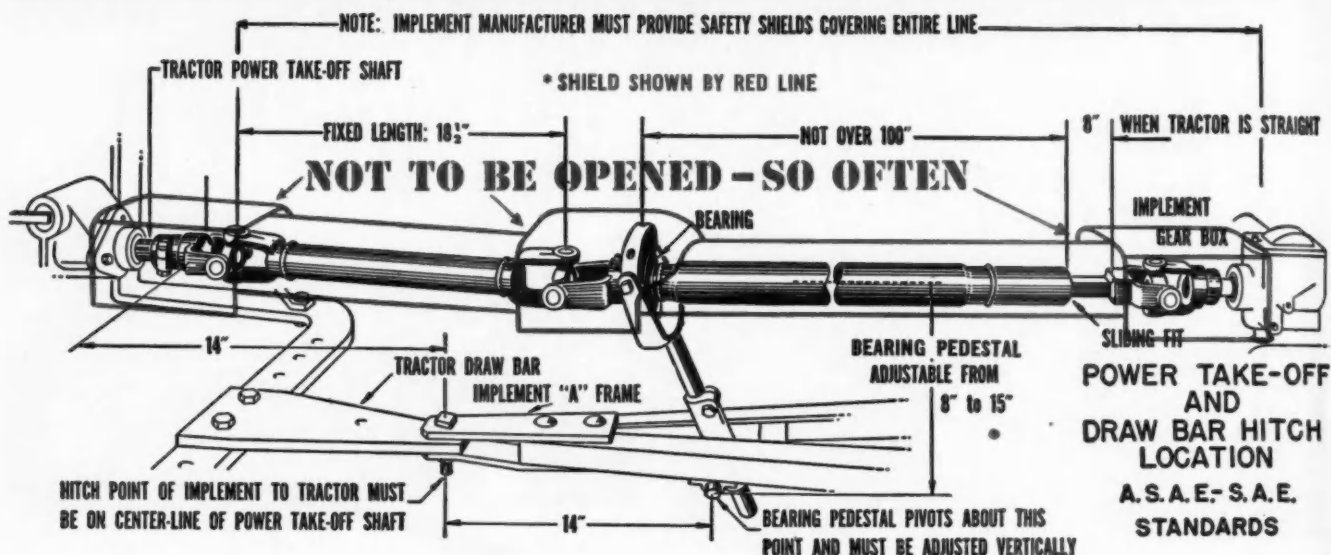
Chicago Office: 122 S. Michigan

COMMERCIAL CAR JOURNAL, August, 1952

215

Keep Your SAFETY SHIELDS

In Place — with Once-a-Season Lubricated
MECHANICS UNIVERSAL JOINTS



SIZE	TYPICAL APPLICATIONS	RATED H.P. AT 532 R.P.M.
1 1/2 RA	1 - 2 Row Corn Picker — Binders — Small Combines	10 H. P.
2 RA	2 Row Corn Picker — Binders — Large Combines — Windrows	20 H. P.
3 RA	Large Balers — Ensilage Harvesters — Roto Beaters — Etc.	30 H. P.

All drive lines can be supplied with safety slip clutches which can be set for any torque needed.

Operators resent having to stop several times a day to remove safety shields, grease plain bearing joints and replace the shields — or risk breakdowns. Don't let them blame YOUR machine. Specify MECHANICS Roller Bearing UNIVERSAL JOINTS that require, at most, only once-a-season lubrication. The operator will leave the

shields on — and won't blame YOUR MACHINE for "joint trouble" — because MECHANICS joints do not waste his time.

MECHANICS UNIVERSAL JOINT DIVISION

Borg-Warner • 2034 Harrison Avenue, Rockford, Illinois

MECHANICS

Roller Bearing 

UNIVERSAL JOINTS

For Trucks • Tractors and Farm Machines

Pathfinder

STATE
APPROVED

LIGHTING EQUIPMENT

Points the way to **FLEET SAFETY!**



Pathfinder

SELECTO-SET

SIGNAL LIGHTS for

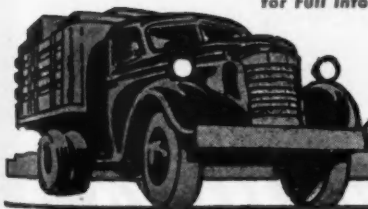
light panel trucks and other
delivery vehicles

EASY to install. Three types (flush, fender type and stud mounting) permit you to make sets to fit most light delivery vehicles. Directional signals flash from clear-lens front lights and red-lens rear lights. Automatic, self-cancelling switch cuts off after turn is made.

SET NO. SC4-369 (Illustrated)

Complete with 2 fender-mounting lights with clear lens and 2 fender-mounting lights with red lens, 21 C.P. bulbs, switch, flasher and wire for complete installation.

See Your Pathfinder Jobber or Write Direct
for Full Information — **TODAY!**



AUTO LAMP Manufacturing Co.
3907 INDIANA AVENUE • CHICAGO 90, ILLINOIS



Illustrated: No. 4301
Fender Mounting Type

Pathfinder

SEALED BEAM...CLASS 1...TYPE "A"

SIGNAL LIGHTS for trucks,
tractors, trailers and busses

Conform to all S. A. E. Specifications!

FLASH 12 square inches of illumination. Self-cancelling switch provides *automatic signal cutoff* after turn is made (also operates manually).

6 SETS FIT MOST HEAVY DUTY VEHICLE REQUIREMENTS
Easy-to-install set is complete with steering post switch and beam indicator, harness, mounting clamps, flasher, inline fuse, all necessary wiring, and full directions for installing. 6 or 12 volt lamps available.

- Sturdy Black Weather-Resistant Enamel Finish
- Moisture-proof — Dust-proof — Fume-proof
- Sealed-Beam GE Units



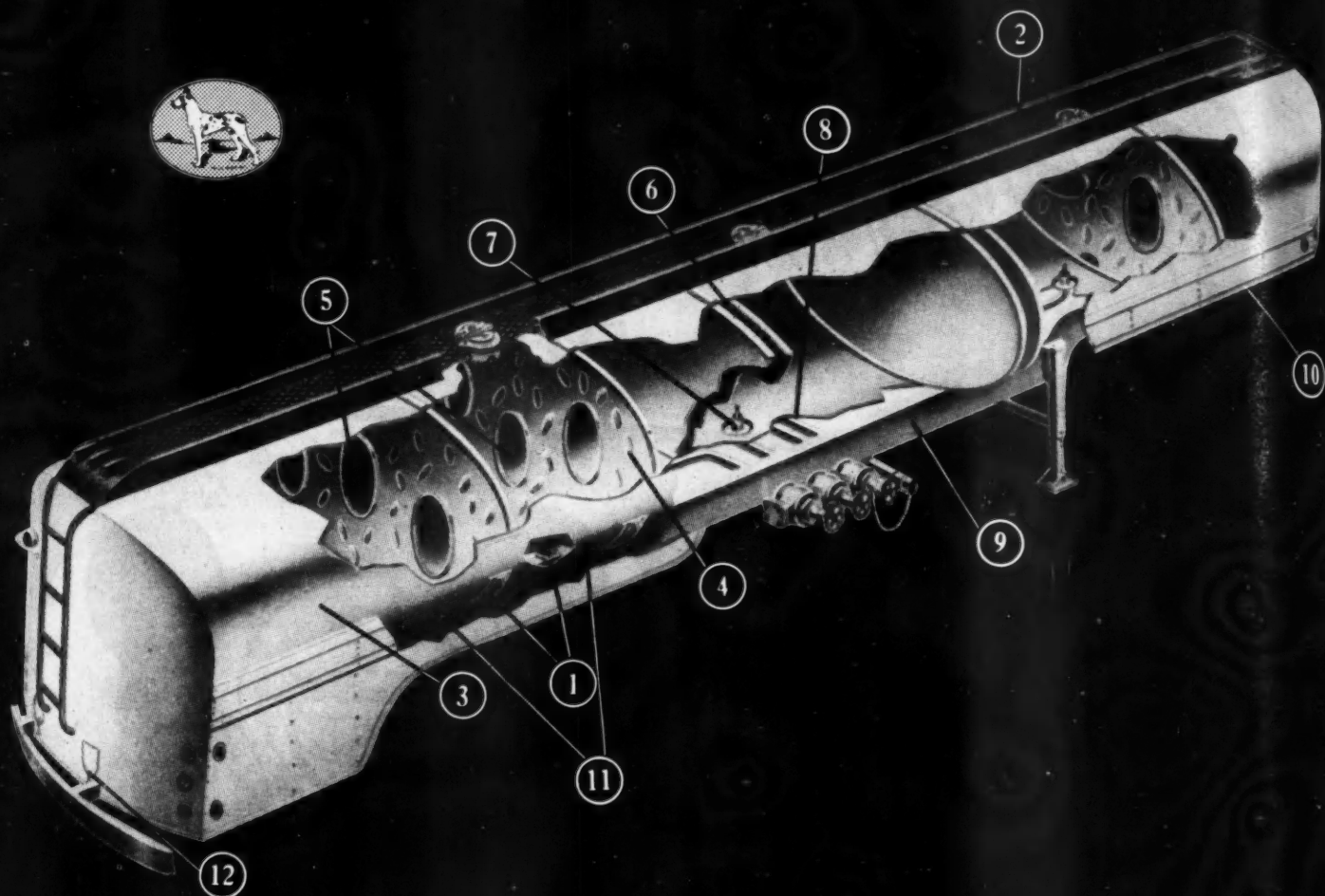
FENDER
MOUNTING



SURFACE
MOUNTING



FLUSH
MOUNTING



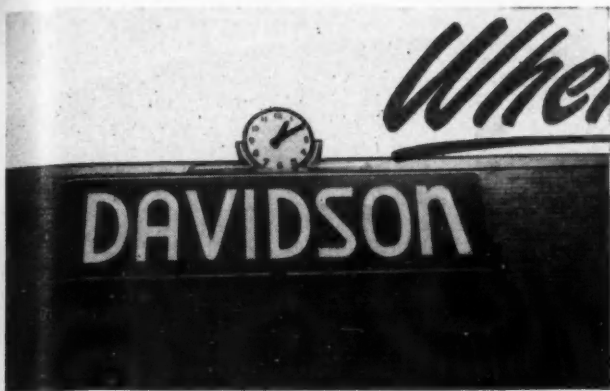
Check these "inside facts" that prove the GREAT DANE your best TANK value.

- ① "SPRING-WELD" Exclusive welding absorbs stresses.
- ② CATWALK is part of the tank, not an accessory; makes tank more rigid.
- ③ HI-TENSILE STEEL TANK weighs less, provides added strength and safety. Exceeds I. C. C. specifications.
- ④ DIMPLED BAFFLES add much greater strength to baffles.
- ⑤ STAGGERED BAFFLE HOLES. Another GREAT DANE first that throttles ramming effect of surge. Makes tank safer.
- ⑥ ⑦ ⑧ PIPING of thin-wall steel-tube with large radius bends, vibration-proof connections. Available with I. C. C. emergency valves or with removable elbow.
- ⑨ SUB-FRAME of hi-tensile steel provides greater strength, less weight. Protects tank from all pulling and braking stress. Carries tires and landing gear. Greatly lowers maintenance costs.
- ⑩ ⑪ ⑫ PLUS FEATURES. Fifth wheel mounted to sub-frame eliminates stress on tank. No wheel pockets over undercarriage. Hose carriers easily accessible. The famous GREAT DANE Glide-Ride Tandem Assembly.

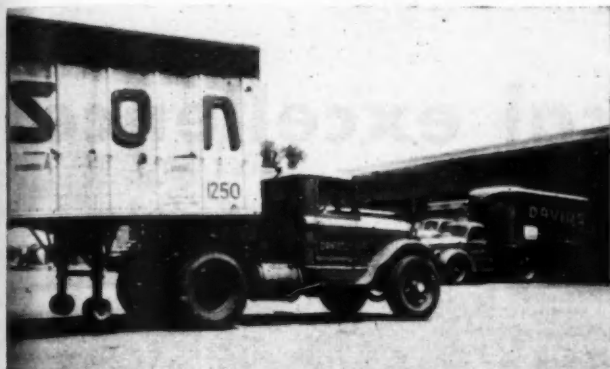
See your GREAT DANE dealer today for literature and prices!

GREAT DANE *Trailers*
SAVANNAH, GEORGIA

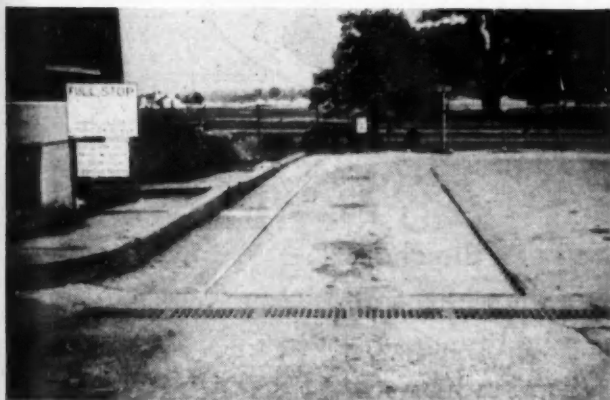
Where "Time is Money"



56-year-old trucking company — one of the largest in the country



Unusually heavy yard movement of trailers due to frequent checking of weight during loading.

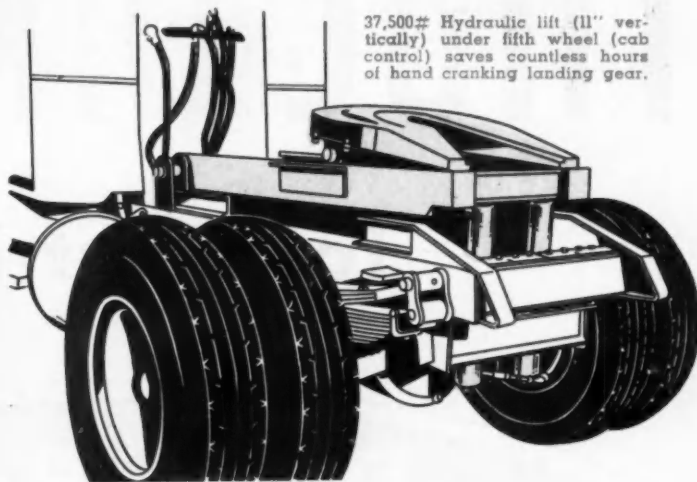


50-ft. scale kept in A-1 condition for 'round the clock use, under supervision of certified weighmaster.



Each axle carefully weighed before trailer goes on the highway.

CEMCO TRAILER JOCKEYS *are indispensable*



37,500# Hydraulic lift (11" vertically) under fifth wheel (cab control) saves countless hours of hand cranking landing gear.

Rigid enforcement against overloaded trucks prompts frequent checking of truck weight during loading process at Davidson Transfer & Storage, Baltimore.

Operating a fleet of over 500 units — serving six states in the busy Atlantic seaboard — Mr. David Davidson, Manager of Operations, after 2½ years' use, reports "the Cemco Trailer Jockey is indispensable because we operate against time".

CEMCO

A Name that has meaning in the trucking industry.

CEMCO INDUSTRIES, INCORPORATED • GALION, OHIO



Weigh beam equipped with "weightograph" to tell the story quickly.

First Choice

for electrical excellence



Delco-Remy electrical units have been the choice of automotive engineers for more than half a century. Electrically, Delco-Remy equipment has set the standard of excellence for the industry.

Logically, too, Delco-Remy electrical units are preferred—as original equipment and for service parts—by the nation's most experienced fleet owners.

DELCO-REMY ELECTRICAL EQUIPMENT

A GENERAL MOTORS PRODUCT



A UNITED MOTORS LINE

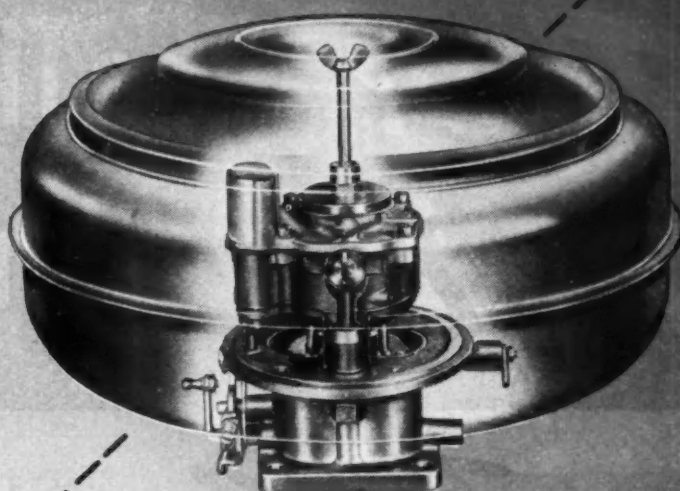
DISTRIBUTED BY WHOLESALERS EVERYWHERE

Delco-Remy

DIVISION, GENERAL MOTORS CORPORATION
ANDERSON, INDIANA

WHEREVER WHEELS TURN OR PROPELLERS SPIN

*Lower
Hood Lines
— Better
Performance*



for 1952
Luxury Cars

with The New HOLLEY CENTRI-FLO Carburetor

Hood lines are lower—visibility for the driver greater in many of 1952's fine cars than in any previous models. One important reason: the Holley Centri-Flo carburetor.

The Centri-Flo is the first commercially accepted carburetor ever built with the high capacity air cleaner mounted over and around it so as to hide the main body. This carburetor-air cleaner combination provides minimum overall height and allowed automotive designers to lower hood lines—increase visibility for the driver.

The Centri-Flo is a true concentric carburetor. The fuel level over the centrally located jets is the same regardless of angularity.

Centri-Flo equipped passenger cars and trucks start instantly on the steepest grades—won't miss or stall during fast stops and starts.

The Centri-Flo is a Holley model 1901. It is a dual-downdraft carburetor designed for engines of 110-180 H. P.

FOR MORE THAN HALF A CENTURY—
ORIGINAL EQUIPMENT MANUFACTURERS
FOR THE AUTOMOTIVE INDUSTRY

HOLLEY
Carburetor Co.

Detroit 4, Michigan

This The Tire That Will Cu Any
is it! Wheel Under Any Op

The Completely New **Firestone** **Transport**

"The Greatest All-Wheel Truck Tire That Ever Hit the Road"

TRUCKERS — This is it . . . the new Firestone Transport . . . the longest mileage, lowest-cost-per-mile truck tire ever built. It's new all the way through . . . new in design, new in construction and it's setting new mileage records up to 35% higher.

It's an all-wheel tire . . . front wheels, drive wheels, trailer wheels . . . on any wheel it gives smooth, even, non-cupping wear without switching from one wheel position to another.

The new Firestone Transport doesn't grow and its tread won't crack. This is because Firestone has developed a new and exclusive process for Gum-Dipping cord and drying it under tension to eliminate stretch. This tire has been tested and proven over 30,000,000 miles under all operating conditions. Here is what operators who have used it say:

"At the speeds we travel between the Carolinas and the East, tires take a terrible beating. This New Transport will stand up under anything we've given it. Our mileage is up more than 35%."

John M. Akers, Vice President, Akers Motor Lines, Inc.,
Charlotte, North Carolina

"Tire costs are a big item with us because of these mountain runs we wear treads down pretty fast. This New Transport has cut our tire expense way down — helped us maintain schedules too."

Gene Johnson, Vice President, Pacific Intermountain Express
Los Angeles, California

"With these New Transports we've licked the problem of tire heat on our desert runs. Our records show that they outrun anything we've put against them."

Clarence Garrett, President, Garrett Freight Lines
Pocatello, Idaho

"Our trucks roll through Texas where you can get away from the heat. Tires had been going out pretty fast on long runs until this New Transport came along."

Henry E. English, Chairman of the Board, Red Ball
Motor Freight, Inc., Dallas, Texas

New Firestone Transports will increase your mileage and lower your costs just as they have for these operators. Try them and see.

Enjoy the Voice of Firestone on radio or television every Monday evening over NBC

On Any Trucker's Costs On Any Any Operating Condition

NEW MILEAGE-BOOSTER TREAD—Precision-balanced rib design increases mileage up to 35% because tread wears slowly and evenly.

NEW ANGLE-LOCKING RIBS—V-Angle gripping edges nearly double traction life. Skidding is greatly reduced. Tie bars are completely eliminated.

NEW GROWTH-CONTROLLED BODY—Tension drying of body cords eliminates tire growth, tread cracking and gives positive mating of dual tires.

NEW WIDER, FLATTER TREAD—More rubber on the road to give more uniform wear, full traction and increased mileage.

NEW RIM-FIT BEADS—Stronger bead foundation reduces bead and sidewall failure because excess chafing and flexing are eliminated.



Copyright, 1952, The Firestone Tire & Rubber Co.

"Saves time and money"

says shop foreman of packing company



M. H. SIMMONS (right), shop foreman of the Pasco Packing Co., Dade City, Fla., is shown here with **J. E. Coleman**, Gulf sales engineer. "We use Gulf Motor Flush," writes Mr. Simmons, "in our entire fleet consisting of over one hundred trucks."

"We have found that it *saves us considerable*

time and money by thoroughly cleaning these engines without having to disassemble them.

"It would be difficult to estimate the amount of money this has saved us. In addition, by the way, we would like to express our appreciation of your fine Automotive Engineering Service."

Engines dirty? Fight 'em with GULF'S FAMOUS 1-2 PUNCH!

1. Clean 'em out with Gulf Motor Flush to dissolve sludge, varnish and lacquer deposits from rings, valve stems, oil lines, oil screens and oil pans. *No dismantling necessary!*

Gulf Motor Flush is a powerful flushing agent—yet it is noncorrosive. Means more miles of ring life . . . fewer repairs.

2. Follow this up with Gulflube Motor Oil X.H.D. to *keep* them clean.

Gulflube X.H.D., in addition to giving increased mileage, will prevent plugging, sticking of piston rings, clogging of oil screens.

Get in touch with your Gulf representative today and find out how you can cut *your* maintenance costs and increase availability.



GULF OIL CORPORATION • GULF REFINING COMPANY



"the Crown Jewels of Ignition"

ONE PIECE DEEP-DRAWN
BRASS CASE, CADMIUM PLATED
COMPLETELY SOLDERED THROUGHOUT
FOR PERMANENCE

HERMETICALLY SEALED FOR
FULL CAPACITY LONG LIFE
IMPREGNATED UNDER VACUUM
FOR CONTINUOUS SERVICE

LAMINATED INSULATION FOR
HIGH DIELECTRIC STRENGTH
SPECIAL FORMULA FOR MADE
TO PRECISION STANDARDS

SPECIFIC PURPOSE PREPARED
PAPER OF EXTREME DENSITY

CAPSULE TOLERANCE CONTROL
ON AUTOMATIC MACHINES

FINISHED CAPSULE SEALED AND
SEASONED FOR LOAD STRENGTH

CONDENSER TOP TRIPLE SEALED
FOR POSITIVE PROTECTION

PLASTIC WIRE INSULATION
IMPERVIOUS TO OIL AND MOISTURE
MULTIPLE TESTED FOR DEMANDING
AND SUSTAINED PERFORMANCE

Filko

condensers... for every engine

since '27 Each an engineering masterpiece embodying all 12 jewels of perfection and identically built to highest known quality standards

Without an iota of deviation—regardless of size or type—each Filko Condenser is built to conform to the highest known standards of quality. It is this same uniformity that gives assurance of complete, absolute dependability throughout the entire Filko line

of Ignition Replacement Parts . . . Thus, to standardize on Filko is to guarantee matchless condenser performance for all your cars and trucks—Start today to insure increased operating efficiency and economy—with Filko—"the Crown Jewels of Ignition".

F & B MFG. CO., 4248 W. CHICAGO AVE., CHICAGO 51, ILL.

Warehouses in Los Angeles, San Francisco, Fort Worth, New York, Boston, Atlanta, Toronto

CONTACT SETS • CAPS AND ROTORS • COILS • CONDENSERS • BRUSHES • CUT-OUTS • GRAPHITE BRONZE BEARINGS
SWITCHES • RELAYS AND REGULATORS

"Precision Built by Ignition Specialists"

G60394

LABORATORY T



EACH TEST TUBE

contains a metal rod, immersed in oil taken from the same crankcase. Tube 2 also contains long-strand cotton. Tube 1 does not.

1. Notice how acids, present in used crankcase oil, have corroded the metal rod.

2. Metal rod is good as new. Proof of cotton's neutralizing action at work.

LABORATORY REPORT

#8017R

TYPES of ADDITIVES TESTED

INHIBITOR ADDITIVES (oil-soluble organic compounds)	EFFECT OF COTTON ON ADDITIVE
a. sulfur compounds	None
b. phosphorus compounds	None
c. sulfur-phosphorus compounds	None
d. amines and phenol derivatives	None
DETERGENT ADDITIVES (dispersants)	
a. aluminum naphthenate	None
b. alkaline-earth metal salts	None
c. petroleum sulfonic acids	None
POUR DEPRESSANTS	
a. "Parafflow"	None
b. "Santopour"	None
c. "Acryloid"	None
VISCOSITY INDEX IMPROVERS	
ANTI-FOAM AGENTS	
RUSTING AND CORROSION INHIBITORS	
OILINESS AND FILM STRENGTH ADDITIVES	
a. sulfurized sperm oil	None
b. dibenzyl disulfide	None
c. chlorinated naphthalene	None
WEAR-REDUCING ADDITIVES	
VARNISH FORMATION REDUCERS	

TESTS PROVE:

**Pure untreated COTTON
can never affect additives in oil!**



Every laboratory test made to determine the effect of cotton on additive-treated* motor oils proves this result: Cotton is inactive on additives... Cotton cannot possibly have any effect on additives.

In fact, cotton actually helps additive-treated oils to lubricate BETTER. Cotton neutralizes acids and takes out other impurities which can have harmful effects on additives. Cotton is the great absorber of water, which is the root of all acid and sludge-formation evils.

*all the new Heavy-Duty oils are in this class!

Both types of DeLuxe Cartridges utilize pure, untreated, long-stranded cotton, specially-wound by an exclusive DeLuxe-patented winding process. This patented process eliminates the need for any chemical alteration, treatment or fortification of the cotton used in DeLuxe Cartridges.

The utilization of pure, untreated COTTON is one of the many reasons why genuine DeLuxe Cartridges and DeLuxe Graduflo Cartridges do more than merely strain or filter, but ACTUALLY CLEANSE the oil...no matter what type of oil is used.

YES

**BOTH DeLuxe Cartridges utilize
PURE, Untreated, Long-Strand COTTON**

systematically WOUND, not stuffed,
by an exclusive DeLuxe winding process!

DeLuxe Graduflo Cartridge

FOR SIDE-TO-CENTER FLOW
CONVENTIONAL FILTERS



puts new heart into
ALL FILTERS!

the secret is
Spun-Strand!
construction

Long-stranded cotton, is wound tighter nearest the center, becoming gradually more open towards the outside. Such systematic winding prevents soft spots and channels, and assures FULL OIL EXPOSURE to the entire depth of the cartridge. Large particles are trapped in outside layers; smaller, micronic-size ones in the inside.

Genuine DELUXE Cartridge

for FULL-DEPTH FILTRATION
DELUXE OIL FILTERS



heart of the
DeLuxe Oil Filter!

only DeLuxe has the
SPRING and CONE!

In line with the DeLuxe Principle to travel oil the I-O-N-G way, are the carefully-engineered exclusive spring and cone, integral parts of the cartridge. THE SPRING prevents cotton in the cartridge from wadding and packing, which often can impede oil flow or change the rate of flow. THE CONE aids DeLuxe Full-Depth filtration by feeding and uniformly distributing oil at the bottom of the cartridge.

Send for FREE, fully illustrated, GRADUFLO and DELUXE CATALOGS. Also the informative book, "Key to Clean Lubrication," address:

DELUXE

DELUXE PRODUCTS CORP., 1406 LAKE STREET, LA PORTE, INDIANA

HOLLAND-APGAR SAFETY 5th WHEEL PAYS OFF THREE WAYS

Drivers Find . . . IT PAYS OFF!

The unparalleled stability and control over the integrated tractor and trailer achieved with the Holland-Apgar Safety 5th Wheel lets the driver maintain the higher average road speeds demanded by modern schedules and relieves him of tension. Even under hazardous driving conditions, in heavy traffic, off the

highway and through all kinds of weather, he can keep an even, mile consuming pace knowing that he is protected against tip-overs, jack-knives and other common trucking dangers. The proof of this superior roadability lies in the reduced accident experience enjoyed by Holland-Apgar equipped fleets.

Operating Costs Show . . . IT PAYS OFF!

The use of Holland-Apgar Safety 5th Wheels results in lower costs-per-ton-mile all along the line. The elimination of freight damage claims alone has resulted in savings that far exceed the slight extra cost of this 5th wheel. In some instances, rates have been reduced as much as one-third. When you add these insurance

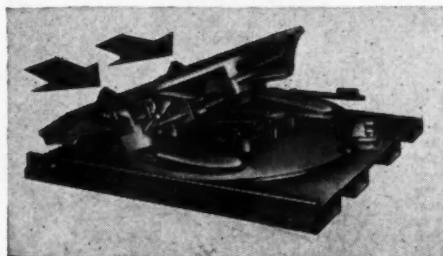
savings to the lowered maintenance costs and extended equipment life that Holland-Apgar gives you, you will readily see that this proven Safety 5th Wheel is one of the most valuable pieces of equipment that you can buy from a straight cost standpoint.

Maintenance Confirms . . . IT PAYS OFF!

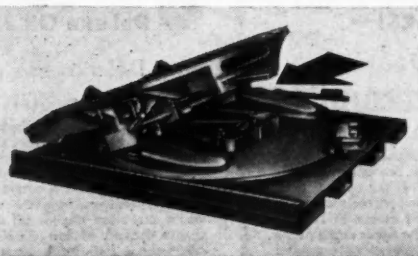
The service life of your trailers will be increased up to 25% by the installation of Holland-Apgar Safety 5th Wheels. The strain and distortion which are a natural result of the unstable, three point suspension of regular 5th wheels is completely eliminated. Not only does this save shop costs but it also provides a way to fuller utilization of your trailers; they stay out on the road where they can earn income. And you'll find that Holland-Apgar 5th Wheels require far less

maintenance than other standard types for Holland-Apgar provides more than twice the needed bearing surface at all wear points and completely encloses the bearings to protect them from abrasive road dust and water. Actual case histories prove conclusively that this extra attention to construction provides a margin of service that far exceeds anything you have ever believed possible.

COMPARE THESE EXCLUSIVE HOLLAND-APGAR FEATURES!



Two spring mounted keys fit keyways cut into your present trailer plate. On interchange trailers, the keys retract automatically . . . tractor utility is in no way restricted.



The rocking shaft is mounted on a rotating disk with trunnions behind pivot point of disk. Thus, shaft stays parallel to trailer axle giving four point support.



Jack-knife stop, built into base plate, allows maximum turn of 94 degrees. Trailer can't touch tractor . . . jack-knives and bump damage during tight turns are eliminated.

TRUCKER DESIGNED FOR TRUCKING REQUIREMENTS

The Holland-Apgar Safety 5th Wheel is the product of collaboration between one of the country's largest truckers and Holland Hitch — the leading 5th wheel

producer. It is the only 5th wheel development to be trucker designed for the truckers benefit.



AVOID THIS ↗

GET THIS ↘



PHOTOGRAPHS SHOW THE SUPERIOR PERFORMANCE OF HOLLAND-APGAR SAFETY 5th WHEEL

The top photo clearly illustrates the extreme distortion to trailer and load that occurs every day at loading docks and in transit when conventional 5th wheels are used. It is this distortion that is responsible for so many freight claims and the costly insurance rates that truckers face. As shown in the photo below, the Holland-Apgar Safety 5th Wheel lets the rocking shaft swing parallel with the trailer axle at all times to provide stable, horizontal support for the front of the trailer and eliminates all expensive distortion. The result is a direct saving to you in lower insurance rates and far greater trailer life.

PROVE HOLLAND-APGAR'S SPEED, ECONOMY, AND SAFETY UNDER YOUR OWN OPERATING CONDITIONS

You can actually see the dollars and cents advantages that the Holland-Apgar Safety 5th Wheel makes available to you and prove to your own satisfaction that this is the best 5th wheel on the market from every standpoint. Simply call or write your nearby Holland Distributor or contact the Holland Hitch Company. We will arrange a field demonstration under any conditions you care to name. You be the judge . . . the Holland-Apgar Safety 5th Wheel will stand on its performance.

PERFECT CONTROL UNDER HAZARDOUS DRIVING CONDITIONS



Test driver provides convincing demonstration

In these action photographs, a tractor and trailer equipped with a Holland-Apgar Safety 5th Wheel is thrown into an intentional skid on treacherous, loose gravel. In the first picture, the front wheels of the tractor are cramped sharply at a speed of 35 miles per hour and the tractor starts to slide, throwing up spurts of dust and surface gravel. In the second photo, taken a split second later, the speed and weight of the loaded trailer overcome the direction of the tractor and the whole rig starts to spin out of control, going into a dreaded jack-knife.

At this point, the trailer meets the built-in jack-knife stop of the Holland-Apgar Safety 5th Wheel and the spin is halted with both tractor and trailer coming to a stop *without damage*. There is no tendency to tip over at any time for the stable, four point suspension keeps the trailer on even keel regardless of such rough, dangerous handling.

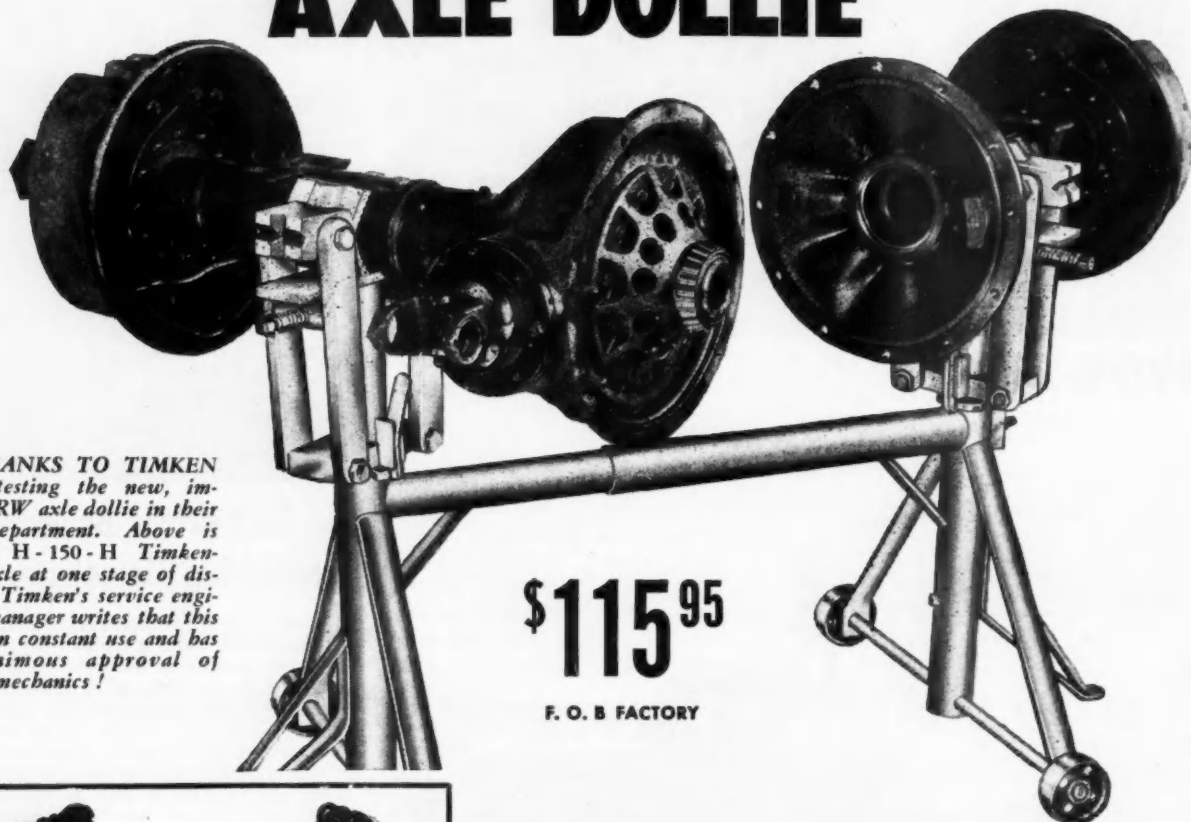
Hundreds of tests and millions of miles of service continually prove that the Holland-Apgar Safety 5th Wheel most fully meets the needs of modern truck line operation over any type of terrain.

**HOLLAND HITCH
COMPANY**
HOLLAND, MICHIGAN

TRIED AND APPROVED

by **TIMKEN-DETROIT AXLE**

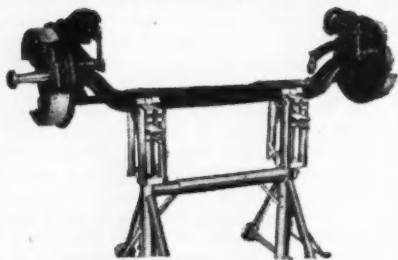
KRW'S NEW IMPROVED AXLE DOLLIE



OUR THANKS TO TIMKEN for field-testing the new, improved KRW axle dollie in their service department. Above is a model H-150-H Timken-Detroit axle at one stage of disassembly. Timken's service engineering manager writes that this dollie is in constant use and has the unanimous approval of Timken mechanics!

\$115⁹⁵

F. O. B. FACTORY



Timken FD-900 Front Axle mounted on dollie. Flat jaws are grooved horizontally for holding reamers, etc., grooved vertically for gripping round shafts.



Clamping jaws can be turned and locked in any of four different positions, 90° apart. Clamping jaws can hold many parts that are awkward or almost impossible to hold in a vise.

SWINGS AXLES OPEN FOR COMPLETE OVERHAUL

Your mechanics don't have to be "weight-lifters" to do a complete axle overhaul with this new, improved KRW Axle Dollie. It handles the largest truck or the smallest car axles equally well. A few turns with a speed wrench and the axle can be separated into easy working position (shown above). That way a complete axle overhaul can be done without once removing the axle from the dollie. Pays for itself in a few overhaul jobs.

- Welded tubular steel — rugged, yet lightweight.
- Portable — easily wheeled to or from car or truck.
- Scientifically designed working height.
- Handles front or rear axles, drive shafts, drive shaft housing, many other parts.

Order from Dept. 85. Prices subject to change without notice.

K. R. WILSON

215 MAIN STREET

BUFFALO 3, N. Y.

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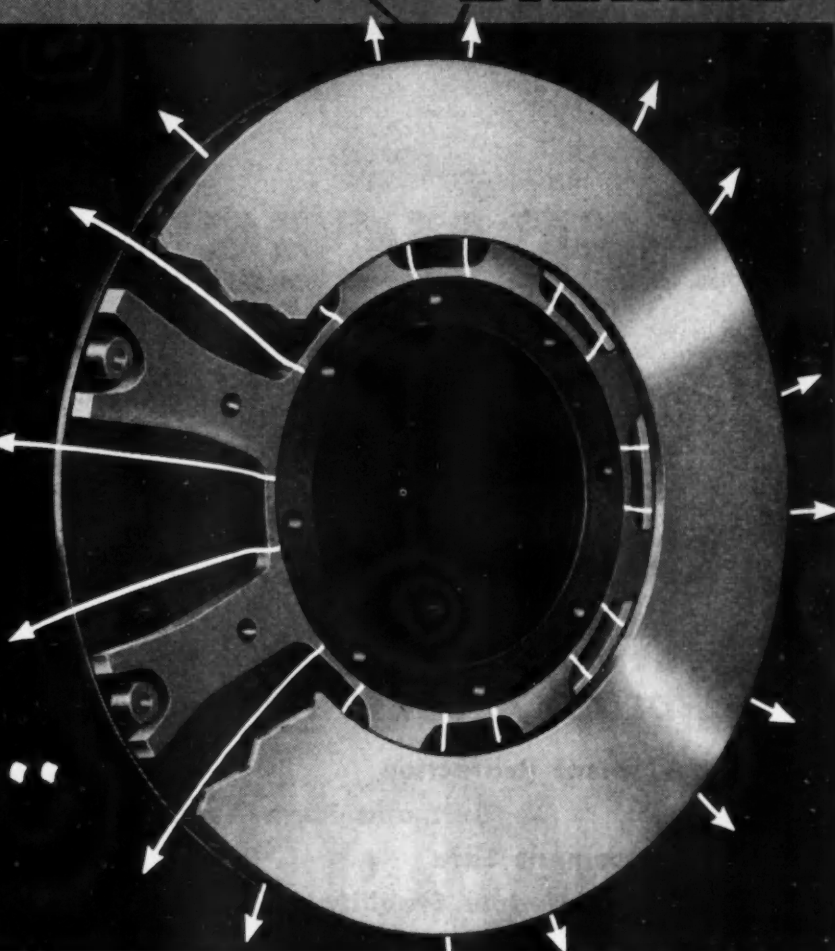


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BRAKES

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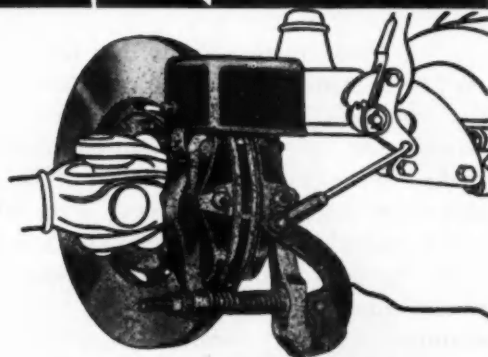
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TRU-STOP, the ventilated, disc-type brakes, serve in an emergency, as an auxiliary brake on long downgrades, and as a positive parking brake. They are a real safeguard in case of power or hydraulic brake failure.

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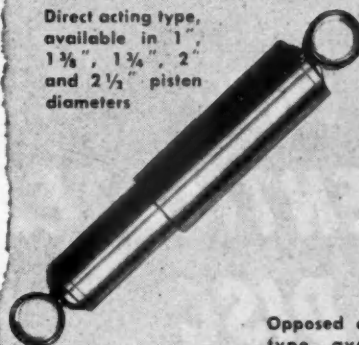
☆ Replacement Ease

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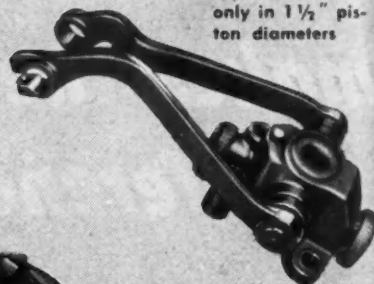
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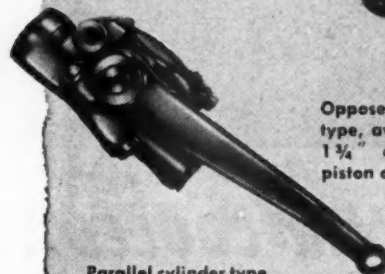
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available in 1",
1 1/4", 1 3/4", 2"
and 2 1/2" piston
diameters



Opposed cylinder
type, available
only in 1 1/2" pis-
ton diameters



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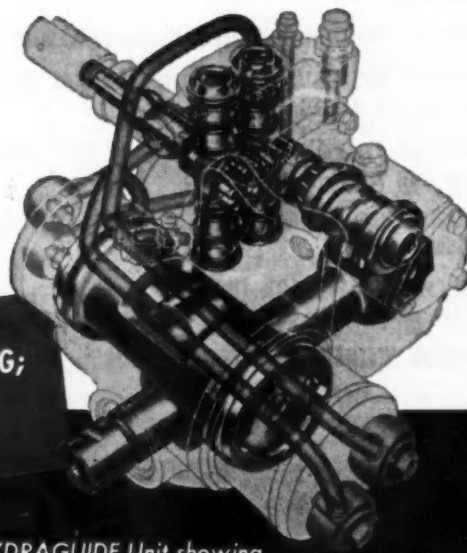
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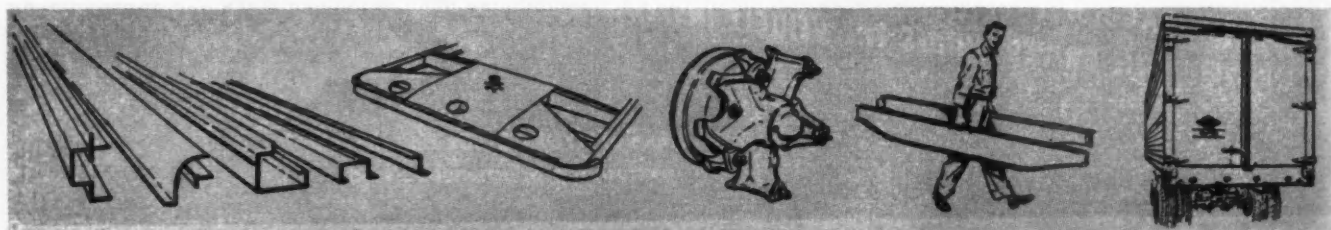


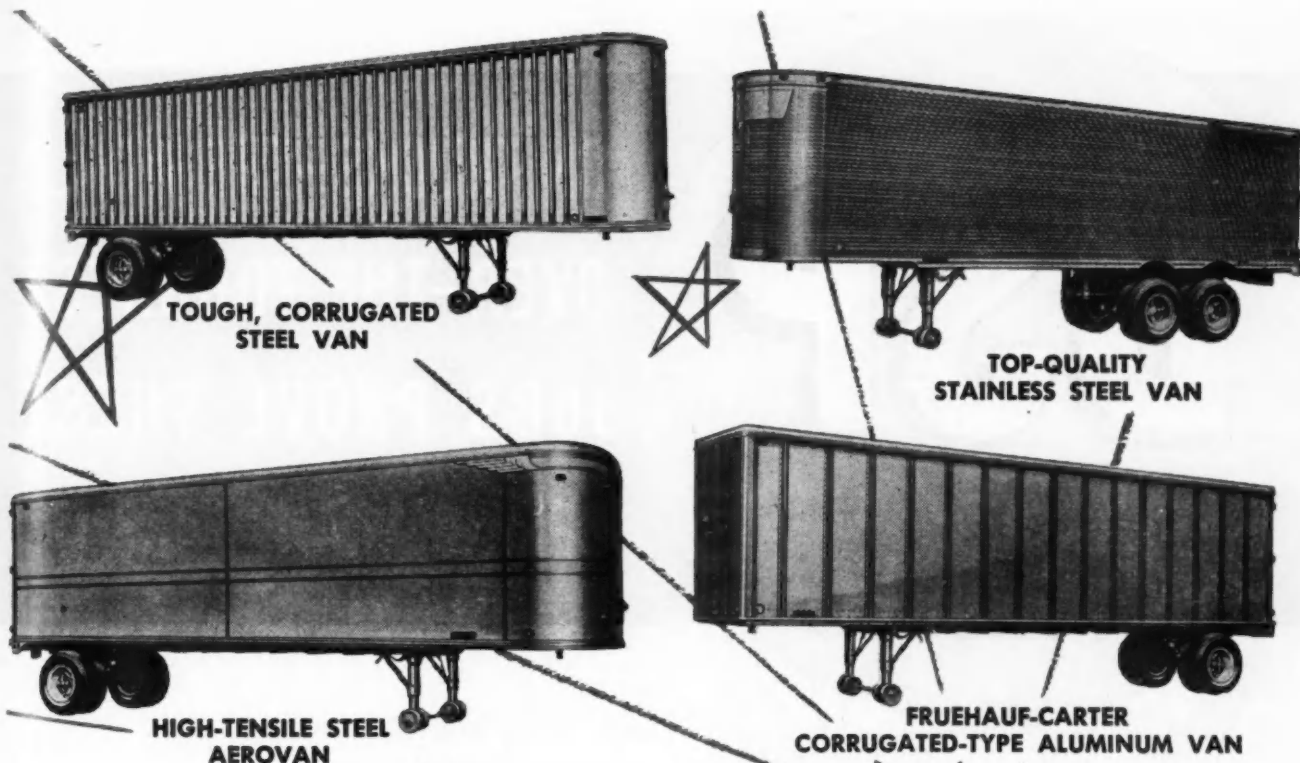
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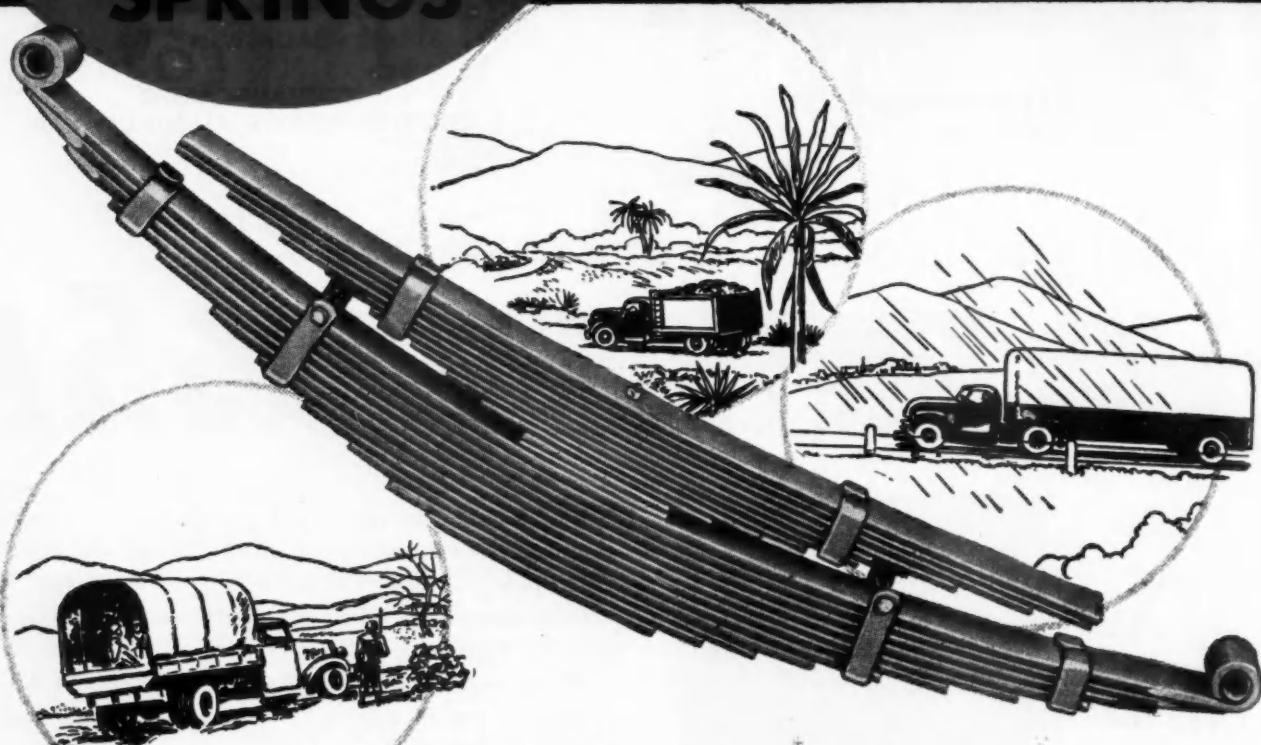
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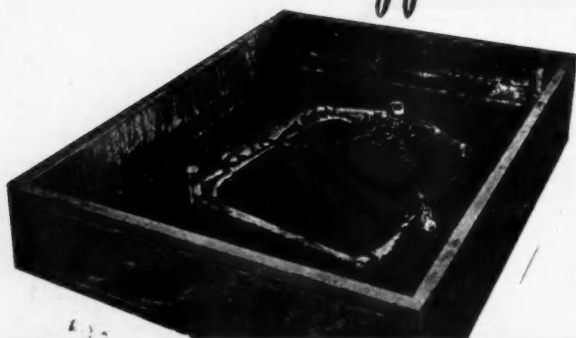
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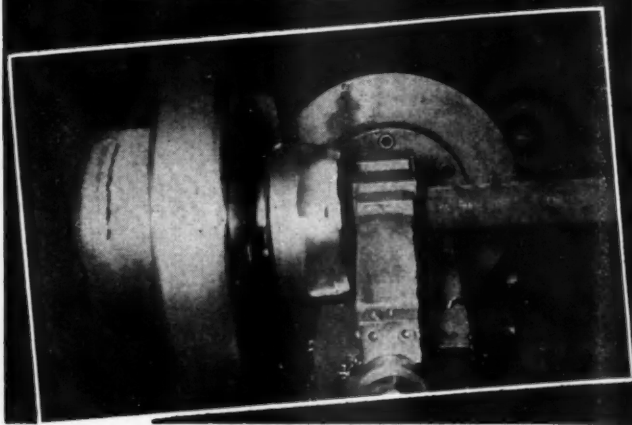
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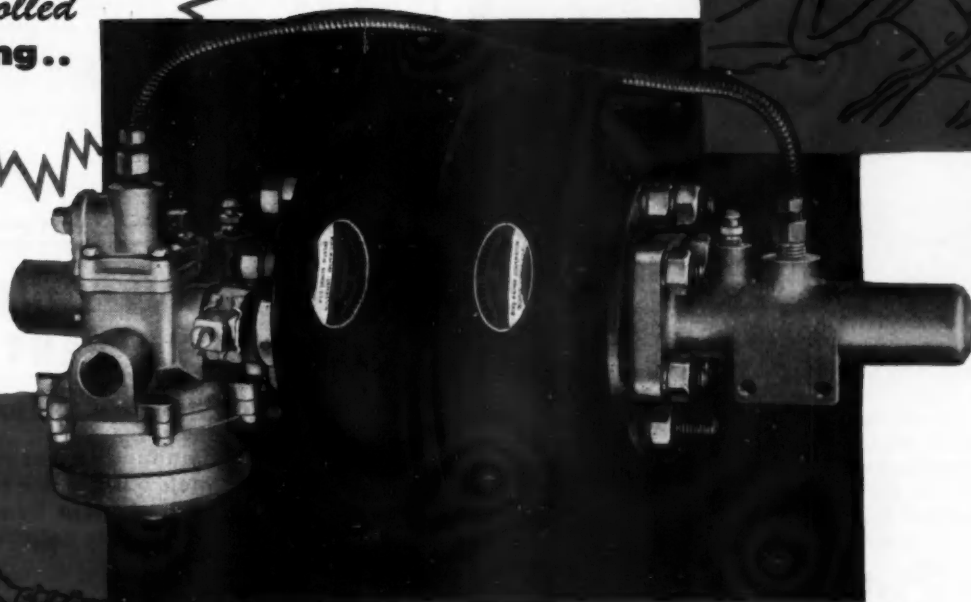
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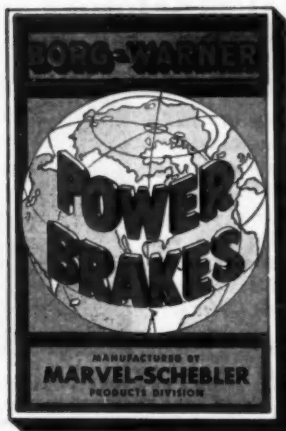
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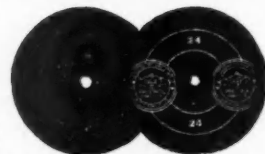
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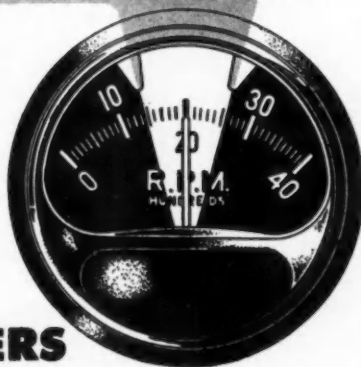
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Are Tops in Every Test!"**



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Springfield, Missouri



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"SAFETY RECORDS on our Dayton Thorobreds have convinced us there's no finer, safer truck tire," declares Frank G. Campbell. "We've tested them since 1936, from the Great Lakes to the Gulf, without a single accident caused by tire failure.

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Daytons deliver value — lowest cost per mile with recap after recap — because their super-strength Rayon Cord bodies are built for *lasting* strength and safety. Test them now, for tops in tire performance!

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Dayton's new Truck Tire Data Book, a complete report on tire savings, is yours free on request. See your nearest Dayton Distributor or write to Truck Tire Division, Dayton Rubber Company, Dayton 1, Ohio.



The NEW Dayton Highway Extra Mileage RIB Thorobred is specially designed for front end and trailer use. It's one of the latest additions to the complete line of great Dayton Thorobred truck tires!

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A COMPLETE LINE OF TRUCK AND PASSENGER TIRES—EVERY ONE A THOROBRED!

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TWG Types, one of which is shown here, for Heavy Trucks and Tractors. CWG Types for Light Trucks and Passenger Cars in Commercial Service.

- ✓ Year after year, Willard has supplied more manufacturers with batteries for original equipment than any other battery maker—proof that engineers, the men who know batteries best, prefer Willard.
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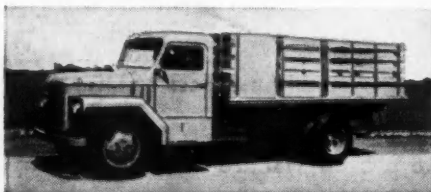
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The LD is the only truck in the 14,500 g.v.w. work range that offers the full traction, safety and economy of *true, balanced* four wheel drive. Get the facts from your FWD distributor or THE FOUR WHEEL DRIVE AUTO CO., Clintonville, Wisconsin, and Kitchener, Ontario.

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You buy more than a truck when you buy an FWD

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- Ability to travel easily and safely on or off the highway
- Ability to haul legal loads economically
- Lower maintenance costs (up to twice the front tire life, for example)
- Up to twice the truck life

World-Wide Sales and Service



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